The Builder.

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*"The Tale of Troy Divine."**

DR. SCHLIEMANN has done so much to present to the European world of the nineteenth century a picture of prehistoric civilisation, that to any new work from his pen, or from his spade, his former publications must present the most formidable rivals. Especially is this the case with reference to his present work, "Troja," as compared to its predecessor, "Ilios." For in that fascinating volume not only has the great explorer brought before us a description of the successive cities reared on the Mound of Hissarlik, but he has further presented us with an autobiographical sketch, rich with a romance like that of the well-spun fictions of De Foe. It would be difficult to cite from any literature, whether of fiction or of biography, a more bewitching story than that of the poor German boy who, with his imagination kindled by the noblest of epic poems, came to the conclusion "*Troja fuit*, and, if so, its remains must exist." It might have occurred to many an imaginative child that this was the case, but to form on this basis the resolution to seek for the traces of the great centre of ancient strife, to fight the world single-handed till he had won the means for travel and for exploration, and then to travel, to explore, and to discover,—all this betokens a perseverance worthy the name of genius, and the record has somewhat of the charm of a fairy tale.

But with all the admiration that we have felt and expressed for "Ilios" and its predecessors, must be blended the remembrance that the point of view taken by Dr. Schliemann is hardly that which we conceive will be permanently occupied by men of the highest culture; and even that the great importance which he,—not unnaturally,—ascribes to every fresh detail of discovery is slightly out of scale. Much that is new, and much that is interesting, is to be found in the pages of "Troja." But, after all, it is little more than a supplementary chapter to "Ilios"; and the substitution of a Latin for a Greek name, giving the idea of a substantially new work, is hardly to be commended. Again, while we sympathise far more closely with Dr. Schliemann than with some of the assailants with whom he does sturdy battle in the pages of "Troja," we think that he could well have afforded to let them alone. And in some points, as in the reiterated arguments as to δέπας ἀμφικυπελλον, the subject becomes wearisome, and the general truth of Schliemann's theories is rather obscured than otherwise by the endeavour to push them too much into detail.

In fact, we do not ourselves hold that Schliemann has altogether done himself justice, or risen to the full height of the great argument which he has done so much to open. The *näif* view of the imaginative German child appears to be still held by the great German explorer. Homer to him was an ancient poet, who described a city and a war, brave men, and the fairest of mortal women, as they once existed, and lived, and moved; and it was to verify the historic accuracy of the mighty epic that the explorer took his pick-axe in his hand. We cannot ourselves hold that the account when reduced to questions of feet and inches, of dates and measurements, of stone, of brick, or of bronze, is much less fanciful, not to say fantastic, than that search for the four rivers of Paradise which is said to have detained a great African traveller so long among the pestilent morasses of the Nile. What Schliemann has really done is of a higher order than he himself conceives. The true outcome of his work appeals more profoundly to the imagination than to the reason, at the same time that it sheds a bright ray of light into the gloom of the past. Schliemann has discovered, past all doubt or cavil, the site of a centre of human art and worship, and rule and war, that was old before Rome was founded, and that appears to have been more repeatedly the seat of empire than even the Eternal City itself. That amid the periods of triumph and of disaster that rolled over pre-historic Hissarlik occurred a siege and an overthrow which early Greece took as a motive for the Epos, Schliemann has, we think, unquestionably shown. But when he tries to tie Homer down to the details now revealed by the spade, we think he as much misses the conception of that in which the truth of poetry consists, as would the critic who should attempt to prove the truth of Macbeth by an enumeration of the number of trees in Birnam Wood, or by a careful measurement of the distance from that spot to "Great Dunsinane."

In the preface to "Troja," Professor Sayce has, to a certain extent, adopted this view. He has referred to the destructive criticism of Niebuhr and his school, a criticism which affects the poetic truth of the Iliad no more than a flight of arrows would affect an ironclad. But Mr. Sayce has considered that this "work of destruction necessarily precedes the work of construction." Whether that be so or not, we must agree that Schliemann "has introduced a new era into the study of classical antiquity, has revolutionised our conception of the past, has given the impulse to that research with the spade which is producing such marvellous results." Mr. Sayce, by the way, does himself great injustice by his eccentric spelling, which has the effect of disposing the reader to close the book. The attempt, led by men of less learning than the Professor, to displace the classical English spelling of words brought into our language from a Latin source, by a very imperfect Greek transliteration, has been gracefully touched by the satire of Bulwer. Spelling reform, as it is called, has its chief advocates among the writers of the "*Fonetik Nuz*"; and we must allow to each person the plea that there is no absolute tribunal in matters of taste. But to print on the same page Mysia and Thrakê, Troy and Hektôr, Peisistratos, Orkhomenos, Iliad, and Odyssey, is to perplex the reader by an unmeaning jumble of letters for which there can be no excuse.

"The present volume," says Mr. Sayce, "may be considered as the supplement and completion of 'Ilios.' Both Hissarlik and the rest of the Troad have now been systematically and thoroughly excavated in a way in which no similarly large district has ever been excavated before." Dr. Schliemann has explored every ancient site in the Troad, besides completing the study of Hissarlik itself. Only two other sites bearing evidences of prehistoric habitation have been found on the Trojan plain. These are the mounds of Hanai and of Besika. But the pottery of Hissarlik has a stamp that is special to itself. It is unlike that found in any other part of the Troad; although on the European side of the Hellespont, on the site of what has been called the tumulus of Protesilaus, pottery and stone relics have been found which closely resemble those in the lowest stratum, or first city, of Hissarlik. Hence is deduced a confirmation of the old Greek traditions to the effect that the founders of Troy were of Thracian descent.

The researches detailed in "Troja" have led Dr. Schliemann to the conclusion that the most stately and famous of the successive cities reared on this secular mound, which we may well allow the discoverer to call the City of Priam, was not the third, but the second settlement on the site. Two distinct periods, however, he tells us, can be traced in the life and history of this second city; an older period, when its walls and edifices were first erected, and a later one, when they were enlarged and practically rebuilt. And the subject is somewhat complicated by the discovery that evidence appears to exist of two effects of fire on the ancient structures, of a totally different character,—the one constructive, and the other destructive. On the 3rd of February last

* "Troja: Results of the Latest Researches and Discoveries on the Site of Homer's Troy, and in the heroic Tumuli and other Sites, made in the year 1882'; and a Narrative of a Journey in the Troad in 1881. By Dr. Henry Schliemann. Illustrated. London: John Murray. 1884.

(*Builder*, vol. xliv., p. 133), in referring to a letter from Dr. Schliemann, printed in a morning journal, we called attention to the suggestion, then first made by him, "that the walls of at least one of the buried cities were built of unburned bricks, and that on the completion of the wall its face was baked, or vitrified, by means of enormous fires kindled at the foot." We then cited, as closely pertinent to the question, the existence of vitrified earthen towers in Scotland, and the marks of vitrification of the seven-staged temple called the Birs Nimrud. Dr. Schliemann has now gone further into this question, and has shown that holes were left in the walls of unbaked brick, at distances of about 4 mètres apart, which he conceives to have been intended as flues to assist in the process of vitrification *in situ*. We refer to the work itself for the details, and also for those of what the explorer regards (p. 86) as results of the destructive conflagration of the city. Our own remarks as to whole-burned walls have been repeated,—or independently made,—by Professor Sayce (p. 180), who refers to the Birs Nimrud, and also to Craig Phadrig, near Inverness, as instances of walls fused into a compact mass after they were built. And Mr. J. D. Butler, President of the State Historical Society of Wisconsin, cites a spot called Aztulan, fifty miles to the east of Madison, where a ruin exists which he concludes to bear evidence of a similar mode of treatment.

Copper nails or bolts, some of large size, bronze lance-heads and knives or daggers, bronze pins (which Dr. Schliemann persistently calls brooches), objects in ivory, chiefly of ornamental character, sling bullets of hæmatite, axes or hammers of diorite and of jade, and pottery of various kinds, are figured among the hundred and forty illustrations of "Troja." One point deserves attention as new. The use of round-bottomed vases, œnochoæ and others, which could not stand on a table, appears to have endured for a long period. Connected with this form of vase is to be noted the existence, in some objects, of ears or projections perforated with vertical holes, the object of which apparently was to allow of the suspension, from pegs or beams, of vessels containing food or drink. This mode of suspension may be thought to have been a necessity among people who were unprovided with tables or shelves; and is illustrated at the present day by some of the habits of the Ainos or hairy people of Japan, whom Miss Bird describes as the survivors of an Aryan race. On page 183 of "Troja" is figured a clay ring, which Dr. Schliemann considers to have been used as a stand for vases with a convex bottom. This, if so, looks like a transition form. It occurred in the third city. But in the first city, together with round-bottomed vases, are found vessels with feet, and also vessels with stands, from which it may be argued that the introduction of tables had occurred in or before the earliest period illustrated by the remains. Thus such cups and jugs as are figured on pp. 34, 35, while rude in form, and but slightly baked and heavy, yet show that the potter's wheel was in use, and also indicate the use of tables as a domestic convenience. We feel some confidence that the evidence of the introduction of tables which is furnished by the existence of vessels fitted to stand on a table, will hereafter be regarded as a mark of date in the prehistoric past. Tables, of course, were known to Homer, and it is not surprising that we should have this secondary evidence of their use by the inhabitants of the pre-Homeric city.

Dr. Schliemann must be allowed to speak for himself as to the results of his explorations in 1882. "To recapitulate the results of my five months' Trojan Campaign of 1882," he says (p. 277), "I have proved that in a remote antiquity there was in the Plain of Troy a large city, destroyed of old by a fearful catastrophe, which had on the hill of Hissarlik only its Acropolis, with its temples and a few other large edifices, whilst its lower city extended in an easterly, southerly, and westerly direction, on the site of the later Ilium, and that consequently this city answers perfectly to the Homeric description of the site of sacred Ilios. I have further once more brought to nought the pretensions of the small city on the Bali Dagh, behind Bounarbashi, to be the site of Troy, inasmuch as I have shown that it belongs to a much later time, and that it cannot be separated from the strongly-fortified city on Eski Hissarlik, which, at a distance of only a few hundred yards from it, crowns a lofty hill on the opposite bank of the Scamander, having been built simultaneously with it, and having been, together with it, the key to the road which leads through the valley of the Scamander into Asia Minor.* I have further proved that the accumulation of ancient ruins and *débris*, which exceeds 16 mètres in depth on the hill of Hissarlik, is quite insignificant on the Bali Dagh, as well as on Eski Hissarlik and on Mount Fulu Dagh, and amounts to almost nothing in the only two places on the Troad where the most ancient human settlements ought to have existed, and where the archæologist might confidently expect to find a rich abundance of most ancient pre-historic ruins, namely, Kurshunlu Tepeh (Dardanié and Palaescepsis) and the Chali Dagh (Cebrené). I have proved that the most ancient remains on all these sites, scanty as they are, belong most probably to the period between the ninth and the fifth centuries B.C., and that there is no trace among them of pre-historic pottery."

Dr. Schliemann proceeds to say that his excavations show that the tumuli known by the names of Achilles and of Patroclus cannot claim a higher antiquity than the ninth century B.C., which he regards as the Homeric age. On the other hand, he ascribes to the tumulus called the tomb of Protesilaus a date coeval with that of the second city of Hissarlik, "which perished in a direful calamity." He considers that his excavations prove that the earlier inhabitants of Ilium came from Europe, and not from Asia; and he repeats the remarks as to the vitrification of the walls *in situ*, and as to the wooden antæ or parastades, as to which we refer the reader either to the pages of "Troja," or to our own previously cited article of the 3rd of February, 1883, entitled "Earthen Monoliths."

Keeping in mind the distinction which we have already attempted to indicate between poetic truth and minute determination of details, we must concede to Dr. Schliemann the title that he most covets, that of the discoverer, or recoverer, of Troy,—the Troy of Homer, of the Epos, and of the days when the gods came down on the slopes of Ida. Is not that a wreath of laurel green enough to content him? For ten years he has been at work on the subject; a period, he says, "which has a fated connexion with the legend of the city." So be it,—that golden legend, which can only be vulgarised by any attempt to give to it the exactitude of a builder's specification. Let Dr. Schliemann act on these, his own words, and his assailants are nowhere. A long-enduring city, of which the walls and edifices, while covering the site of a yet more ancient town, had undergone enlargement and restoration; an acropolis that overlooked the plain, crowned with temples and other large buildings; massive walls interspaced by towers; treasures of golden wealth; a final destruction by fire,—these were the main features of the Hissarlik city,—the second, so far as can now be made out, reared on the commanding site. What more does the student of Homer require to know, in order to agree with Professor Sayce, when he says "it is difficult to resist the conclusion that Dr. Schliemann has indeed discovered Ilion"?

In insisting on the essential difference between such an identification as we have before suggested as applicable to Dunsinane, to Elsinore, to the Cave of Bellarius, or to any of the imperishable scenes around the shadowy names of which the genius of our greatest poet has thrown an undying halo, and the true archæological value of the work of Dr. Schliemann, we are convinced that we rightly divide what is due to poetry, and what to history,—to pre-written history, or history which, unlike that of Egypt or of Babylonia, has left unfortunately no written memorial. The very foundation of precise history,—dates,—here fails us. "The date," says Mr. Sayce (p. xxii.), "fixed for the destruction of Troy by Eratosthenes,—though on evidence, it is true, which we cannot accept, would agree wonderfully well with the archæological indications with which Dr. Schliemann's excavations have furnished us, as well as with the testimony of the Egyptian record." And how long before that approximate date of 1183 B.C. was the city founded? Roman relics within our own shores, and observations elsewhere, concur in indicating a rise of a foot in a century as giving a rough approximation to the age of an ancient site. Rough it must be, because it takes no account, on the one hand, of the depth of the *débris* piled up by one great overthrow, and, on the other hand, of long periods, perhaps, of desolation. But taking it at the roughest, we should have a period of nearly 5,000 years,—reaching back to more than 3,000 years before the Christian era,—for the early settlers on Hissarlik. At that date two contemporary dynasties were reigning in Egypt,—the eighth at Memphis, and the ninth at Heracleopolis. The first long dynasty of Chaldean kings was reigning at Babylon. Agriculture, the use of seed corn, and monarchic rule had been introduced into China. There is nothing inherently improbable in supposing the first settlement in Hissarlik to have been as early as 3,000 B.C. What would, in our opinion, throw more light than anything else on the subject in its present stage, would be the construction of an accurate set of sections, showing the natural soil of the hill, and the superposition of the different strata. Graphic representations of that nature have a great value to the student. If made with due care they confirm or correct one another; and if sufficiently extensive would enable us to distinguish between the general depth of the *débris* of each particular period, and the maximum depth of the same stratum in low-lying points, or under the site of some special overthrow. No calculation of time from depth of ruins can be worth much without such sections as we suggest.

"Troja" contains a contour plan of the site of the lower city, as regarded by Dr. Schliemann, which shows how small a space relatively was occupied by the Acropolis. There is also a plan of the Acropolis itself, on a scale of about 18 mètres to the inch, indicating, by different colours, the walls of the first, second, and third cities. This plan would have much more value if, instead of showing broad and regular lines of wall, it had indicated with exactitude what had actually been unearthed, using dotted lines, or some similar method, to distinguish the theoretic restorations from the actually existing ruins. There are no contour lines on this plan, and it is not fully intelligible in the absence of a section, or any means of determining the depths. A "map of Troas," from the survey of Graves and Spratt, in 1840, is described as revised and completed by Dr. Schliemann. The representations of the pottery and other objects are apparently engraved from photographs, and are very good. As much cannot be said of No. 15, a "View of the great Substruction Wall of the Acropolis," in which the representation of masonry on a vertical face, below the figure with a pick-axe, is to us unintelligible. Either photographs, diagrams, or really artistic sketches have value of their own, but No. 15 is a failure. These are minor defects, but it would be unjnst to Dr. Schliemann himself, as well as to the reader, not to mention cases where the absence of competent editorial supervision detracts from the great value of the work.

* It should be observed that the name Eski Hissarlik occurs twice on the map; once on the spot here referred to, which is about seven miles from Hissarlik, and again in the Thracian Chersonesus, on the European side of the Hellespont, near the tumulus of Protesilaus.

CIRCULARS.

For a ten minutes' dip, the "Post-office London Directory" is probably the most entertaing compilation which the painstaking of book-manufacturers has ever produced. Nothing makes one see so clearly the energy with which circulars are hurled forth than a careful glance at a certain page, where the names of over a dozen circular addressers,—otherwise called envelope addressers,—are to be found. Hints are given there in a modest way with reference to capacity, staff, and scientific methods of going into and getting through work. Certain of them make their boast of knowing the names of all the tradespeople and professional people in the United Kingdom,—and of all the other people upon whom they think paper, ink, and postage may possibly not be wasted. Investors are known apparently by some special instinct by these able servants of the public, and very properly regarded with special reverence. Foreign lovers of their kind seem also to cultivate sedulously that worthy class of our countrymen,—if we may judge by the liberality with which the circulars of foreign lotteries reach us and our friends.

Modern Quaker bankers,—possessed of some

sense of humour, and of the requirements of their own time,—place their addresses and "Esteemed Friend," in lithography, at the head of their note-paper, and write the remainder of their valued communications, probably with a stylographic pen,—the heading is constant, but the matter varies. This presents an odd contrast with the old fashion of circular letters, specially addressed and specially begun and concluded, but the body the same in all. These are the circular letters to which our Post-office accords the privilege of being carried for a halfpenny each, or if they are of ampler dimensions, a halfpenny for each two ounces. The official description makes them "letters in identical terms, intended for transmission to several persons, and the whole or greater part produced by means of ordinary type, engraving, lithography, or other mechanical process." Circular letters have,—in the gradual retrenchment of ceremony,—frequently ceased to be letters at all, and the word circular by itself has to meet the case.

Precisians,—hurt by observing the unsteady walk of words which they have struggled to keep straight,—feel, it is said, alternately a sublime and gentle pity, and a desire to gag the whole human race. Most of us seem to worship the precisians; but have, in our secret hearts, a preference for the agreeable ease which brings some words into common use and honour, sends some into retirement more or less complete, and slowly modifies the sense of others. The word "circular" at the present moment is used of *anything* multiplied by type, engraving, lithography, or other mechanical process, which is delivered by post or by hand in considerable numbers, and has a natural affinity for a waste-paper basket. The circular, which calls attention to a new slate or stone quarry, a patent plaster, stove, paint, boiler, trap, valve, lock, sash-fastener, or coat-hook, is far too often treated as an impertinent intruder. The dissembler who receives it gives a mere glance,—makes it, if possible, into a very inferior ball,—and gets rid of it rapidly. Mr. Walter Shandy's "pish!" would be the expression looked for as in harmony with the action,—the relief appropriate to so strong a sense of burden, injury, and indignation. The ingenious reader may fairly be left to make, if he chooses, any further analysis. Let it be agreed that in well-regulated minds there is a hearty dislike of useless lumber; that Charles Lamb's mockery of the saving, by other people, of old match-boxes and similar trumpery may be relished with grim satisfaction and without remorse, as also the Sartor's desires anent old clothes, and the things of which they may stand as types.

A free indulgence in expansions and digressions might, however, lead to the way of treating trade catalogues and their congeners indulgently, and keeping them ready for reference, being comprised in a single paragraph; and we wish to put on record a longish list in the hope that it will be referred to frequently. The plan has been in use for a dozen years or more in the office of a well-known London architect, who happened to state to apprehending ears that the office-boy could lay hands on a special paper (the description of a patent system of glazing), in less than a minute, and was induced to explain, and afterwards to give permission to make use of the explanation. Binding, or sticking into blank books of guards (without leaves) are both very good, but the papers vary very much in size; some soon grow out of date, and a set of volumes of that sort require clever indexing, or the needle is too well hidden in hay. Besides, carrying about a comely quarto or folio book is a different thing from getting the right pamphlet, engraving, or memorandum, and carrying it away in your neat brief-bag. With large pigeon-holes and a rough system of classification such as must be resorted to in practice, many papers are found to possess a vagrant temper, and three pigeon-holes at least must always be searched in order to discover a single wanderer.

Mr. J. Douglass Mathews has classified boldly in the *Architects' and Contractors' Handbook*,* of which the first number has been published recently. He has taken all the circulars sent out by manufacturers and others who make things to be used in and about buildings, epitomised them, placed the epitomes under headings, and then grouped them under one or another of the dozen building trades. Special sections are also devoted to sanitary manufactures, &c.; stoves and warming-apparatus; gas lighting and warming; electric lighting; water-closets and supplies, and ventilation. Some querulous persons may, on noticing that sanitary work occupies about a quarter of the book, and warming and ventilation almost another quarter, be more hopeful of these matters receiving in time disproportionate attention. The handbook, which is to be issued annually, is intended, says the preface, to be always the most modern guide,—"to the immense variety of materials and appliances for the construction and adornment of buildings, and the convenience and health of the inmates, which the facilities afforded for the transit of materials in the raw and manufactured state, and the rapid strides made by science in recent years, have placed within reach of the architect and builder." The novel idea may be commended, and a useful annual publication looked for, we hope, from the skilled and trustworthy editor for many a year. It may, perhaps, be worth while to hint that information as to prices might be encouraged either in the abridgment or in the advertisements. The prices need not occupy much space nor be put in the same type as the statements; but if such considerations are to be kept rigidly out of sight, the touch of the solid earth seems wanting. Abstention from any bias or expression on the part of the editor, a sort of attitude of seeing all fair to everybody, may also be too rigidly adhered to. Improvements are promised, that is willingness to make them when required is mentioned. The editor earnestly begs architects, surveyors, contractors, and others, especially those resident out of the metropolis, to kindly furnish him with any information as to materials and manufactures that are not now included,—which seems a fair request, and one that should meet with plenty of response.

It was the classification, however, which brought the book under notice at this point. In it the very proper desire to keep down the number of the trade headings leads to odd results. Concrete building, for instance, appears under "bricklayer"; and fireproof construction (such as the Dennett vault) is placed under the heading of "ironfounder and smith." Many things of this sort are easy and proper when you have condensation, pagination, indexes, and binding. In dealing with the circulars themselves the right plan is to take care that every paper, of any value, shall reach some place prepared for it within, at most, a month of its arrival. It must be marked in such a way that, if it is removed, it may be replaced at the cost of next to no thought, as part of the putting away which should recur at the end of every well-spent day. After receipt and examination the circulars should be collected, say in a deed-box. Every month an intelligent assistant should mark each paper in pencil with a letter and a number, and an office-boy should stencil them in Indian ink in a corner. The stencilled letters should be bold,—not less than ¼-in. high. A good way of keeping the papers is to wrap up a convenient number of them in a piece of holland,—about 2 ft. 6 in. square proves a good size. Each wrapper should have a couple of strong tapes about 1 ft. 6 in. long, sewed to opposite ends. The wrappers having been duly labelled on the outsides, the bundles may be arranged on end on a couple of shelves labelled along their edges.

The only real difficulty is in settling the rightful destination of any paper in which two specialities, at least, are dealt with,—the best rule is to place it by the best known speciality. The thinning out of superseded papers,—some for destruction and some into a bundle of "superseded and duplicates,"—should be done about once a year, and circulars issued by the same manufacturer on allied subjects may, with advantage, be fastened together. The creation of new sections to meet fresh breakings out will, happily for us all, also be required. The compilers of directories steadily call attention to the additions made every year to meet the requirements of fashion, science, or necessity. There are quaint illustrations of manners in the fact that dado manufacturers, drain-cleansing machine manufacturers, and artificial human milk manufacturers, among others, were recently admitted under these special headings to the London Directory for the first time.

The following is a list of Trade circulars, showing the way we suggest for grouping, marking, and keeping them, so that they may be readily referred to:—

A 1. *Machinery.*—Steam boilers and engines. Boiler sheathing,—non-conducting compositions. Hot-air, gas, and wind engines. Bellows and forges.

A 2. *Building Plant.*—Cranes, crabs, pulley-blocks. Elevators. Lifts,—hydraulic, steam, and hand. Hydraulic presses.

A 3. Mortar Mills.—Stone-working and tunnelling machines, excavators; stone-breaking machines; explosives for blasting.

A 4. *Woodworking Machinery.*—Workmen's tools generally.

B 1. *Bricks.*—Common building, slag, blue, clinker, facing, glazed, moulded, ornamented, beaded for garden walls.

B 2. *Tiles for Paving.*—Ordinary ware, Staffordshire, encaustic; kiln bricks for drying malt.

B 3. *Tiles for Wall Linings.*—Glazed tiles, majolica tiles, Neapolitan, &c.; porcelain; Doulton's ceramic decoration.

B 4. Tiles for roofing.

B 5. *Fireclay Goods.*—Flue-pipes (and terra-cotta ditto).

B 6. *Stoneware.*—Drain-pipes (also cast-iron drain-pipes); patent joints; gully-traps; stoneware damp-courses, &c. Also drain-cleaning rods; ventilation of drains; testing of drains.

B 7. *Terra Cotta.*—Chimney-pots (in all wares); pavings; ornamental work.

C. *Asphalte, Metallic Lava, &c.*—Paving, roofing, damp-courses. Tar-paving.

D 1. *Limes, Mortars, Cements.*—Plaster of Paris. Ornamental plastering, sgraffito, patent laminæ, papier-mâché, Carton-pierre. Also silicate cotton (slag wool) for pugging.

D 2. *Concrete.*—Concrete and other similar construction (Dennett vaults, Brannon's patents); artificial stone; concrete paving; concrete slab walls.

D 3. *Stones, Marbles* (and Imitation Marbles). Granites; onyx; serpentine; mosaics, &c.; stone preserving and indurating processes.

E 1. *Slate,*—roofing, enamelled. Ties for hollow walls (and iron ditto).

E 2. Slate billiard tables; other billiard matters.

F 1. *Iron,*—bond, girders, joists, roofs. Corrugated, galvanised, and enamelled iron. Bolts, coach-screws, &c.

F 2. The use of iron in fire-resisting construction.

F 3. General lists of iron goods. Household requisites (and in other materials). Iron wine-bins.

F 4. *Gratings.*—Glazed gratings, &c. Coal-plates. Step protectors (also Hawksley's patent, Lindsay's, &c.).

F 5. Iron Windows (also copper, gun-metal, &c.).

F 6. Iron fences.

F 7. Portable structures in iron, &c. Iron churches, &c.

F 8. *Ornamental Metalwork,*—gold, silver, brass, bronze, iron, nickel, &c.

G 1. *Zinc,*—roofing and manufactured.

G 2. *Copper,*—also all lightning conductors.

G 3. *Pewterers' Work.*—Public-house fittings, &c.

H 1. *Timber.*—Ordinary and rare woods, not wrought. Wood fencing. Wood block floors. Wood paving. The preservation of wood.

H 2. Machine-made and foreign joinery; steam-struck mouldings, &c.

H 3. Parquetry, marquetry, &c. Wood chimney-pieces, and other wood fittings. School and church furniture. General furniture. Furniture warehousing.

J 1. Hinges. Locks. Latches. Door furniture. Springs.

J 2. Safes. Strong-rooms.

J 3. Sash and casement fasteners. Fanlight openers, &c. Cill-bars. Sash-pulleys, &c.

K 1. *Shutters,*—revolving, and all others in wood and iron. Revolving partitions. Shutter-bars, &c.

K 2. Shop-fronts. Show-cases.

K 3. *Blinds,*—sun, wire, Holland, Venetian, helioscenes, &c. Fittings for curtains.

K 4. *Improved sash-windows. Sash-lines,*—flax, leather, jute; ribbons, chains. Sash-line holders.

L. Stable fittings and requirements. Cow-house fittings, &c.

M 1. *Warming Apparatus.*—Hot air, hot water, &c.

M 2. *Stoves* (except gas stoves, which are in N 2); ranges, cooking apparatus, &c. Kitchen boiler explosions, safety valves, &c.

M 3. *Laundry Fittings.*—Washing, mangling, drying, &c.

M 4. *Horticultural Buildings.*—Horticultural decorators. Nurserymen; also lawn-mowers, garden-engines, and gardening generally. Summer-houses. Rustic work. Cork, &c.

M 5. Smoke doctors. Smoke-curing machines. Chimney-sweeping.

M 6. Fire-engines. Fire-escapes. Fire annihilators, &c. Fire-signals.

M 7. Ventilators and ventilating apparatus.

N 1. Gas manufacture. Gas apparatus,—fittings, regulators. Spence's metal.

N 2. *Gas-stoves.*—Cooking by gas. Gas-baths. Patent geysers, &c.

N 3. Petroleum, &c., stoves. Oil-lamps; oil for lighting.

* The Architects' and Contractors' Handbook, and Illustrated Catalogue of Materials and Manufactures. Edited by J. Douglass Mathews, Architect, F.R.I.B.A., District Surveyor for Stoke Newington, &c. Published annually. London: Batsford. Liverpool: Harrison & Co. 1883.

N 4. Electric lighting.
O 1. Domestic, &c., bells; wires and cranks, electric, pneumatic.
O 2. Speaking-tubes. Telephones.
O 3. Church and school bells. Chimes. Clocks. Sun-dials.
P 1. Water and earth closets; trough closets; urinals. Metal traps.
P 2. *Water Supply.*—Pipes (and pipe-joints, &c.), valves, water-meters. Regulations of water companies. Water-waste preventers. Flushing-cisterns. Pumps. Hydraulic rams. Hydrants.
P 3. Filters. Softening water, &c. Refrigerators.
P 4. Penstocks. Sewage meters, &c.
P 5. Disinfectants. Vermin destruction, &c.
Q 1. *Felts*, for roofing, &c. (also for damp-courses). Floor-coverings,—carpets, oil-cloth, linoleum, kamptulicon, cork carpet, &c.
Q 2. Tents. Hammocks. India-rubber goods. Garden-seats.
R 1. Plain glass goods, glass tariffs, &c. Silvered glass. Daylight reflectors.
R 2. Patent systems of glazing.
R 3. *Ornamental Glass*,—stained, embossed, &c. Sand-blast process.
S 1. Paints, dyes, stains, distemper. Varnishes. Polishing. Copper coating for metal, &c.
S 2. Imitations of woods and marbles. Decorative painting. Sign-board writing.
S 3. Solutions for damp walls. Tin-foil. Laminated lead, &c.
S 4. Decorative wall-papers; also Lincrusta-Walton, &c.

There need be no law against a man's own memoranda on special subjects being put with other people's. The bundles of circulars may be looked upon as a large, somewhat shapeless, and very miscellaneous common-place book. Everybody is, by custom, allowed his own fads as to poking fires and keeping papers; and each man among us is permitted to consider his own fads the most perfect in the universe. Still, however skilful himself, he will sometimes be disposed to feel a little respect for any bridge which has carried some one safely for a respectable time.

THE ARCHITECTURE OF ENGLISH FICTION.

"The romances of the Middle Ages are a mine from which the *painful* student may extract much valuable information."—Scott.

We propose to consider in a few discursive essays the treatment of English architecture by the great masters of English fiction. The fiction of one age becomes in a sense the fact of the next, and it is mainly in works of the imagination that all real history lies. Writers are never so trustworthy as when unconscious of the truths they convey, and those incidents of their time which flow without effort or comment from their pens, and pass off as mere matters of course, are those as to whose veracity we need have no misgivings. We shall, therefore, accept with due reserve those passages in our authors' writings which are deliberately architectural in intention, and be ever on the alert for those in which the facts as to the architecture of each writer's own day escape him, as it were, unconsciously and by accident.

Speaking broadly, the literature of our country may be divided into three great classes. The romantic literature of the Middle Ages, the dramatic literature of the Tudor and Stuart sovereigns, and that combination of fiction and real life which we call the novel. The latter form of English literary composition cannot be said to date further back than the days of Queen Anne, for De Foe, the first English novelist, though born in the middle of the preceding century, did not publish the great work on which his fame rests until the good queen was in her grave. Leaving aside, for the present, the dramatic division of our subject, we propose, in the first place, to address ourselves shortly to the earliest form of our native literature which falls within our present design, and we wish to observe at the outset that we have never till now appreciated the subtle accuracy of Sir Walter Scott's diction as shown in the motto we have chosen for this essay. The romance of the Middle Ages, if a mine, is one in which the metal bears a small proportion to the bulk, and its separation is only effected by labour. The architectural student who should rummage the miscellaneous stores which this portion of our literature affords will find his toil but scantily rewarded. Amongst a multitude of references and allusions to the social life and customs of the times the light thrown upon their architecture is, at best, but dim and fitful. This may be owing to the fact that architecture was exclusively in the hands of the ecclesiastics, while the composers of the romances were laymen. The early metrical romances were inspired by and nurtured on the institution of chivalry, and date from the early part of the thirteenth century. They are one and all singularly destitute of the art of discriminating character. The machinery is nearly the same in all, and the *dramatis personæ* of one work bear a remarkable resemblance to those of another. There are knights and squires, ladies and dwarfs, an intriguing and unjust steward who meets in the sequel with exemplary punishment, a priceless steed, a faithful hound, an enchanter, and they can seldom get on without

> "A dragon great and grim,
> Full of fire and also venym."

But they are each to each, for the most part, as like as peas. The knights are all handsome and valiant. The ladies are all of peerless beauty, and sometimes prodigies of learning and leechcraft. The dwarf, who has a monopoly of wit, is always ugly and generally malignant. There is little to distinguish one knight from another but his shield and the longer or shorter catalogue of his bravery and brutalities. And the ladies are so entirely cast in the same mould that one cannot understand the enthusiasm any single one amongst them could inspire in the breasts of those who were ready to do and dare so much for their favours.

This colourlessness and characterless manner of portraiture, and this lack of individuality, mark the descriptions of architecture by the romance writers when they are not drawing imaginary pictures. It is fortunate that they did not attempt historical accuracy in their treatment of occurrences which were mostly supposed to have happened before their own day. With commendable naïveté,—for which we cannot thank them sufficiently,—the old writers imported into their stories, whensoever and wheresoever the plot was laid, the dress and manners and surroundings of their own times, just as the ecclesiastical sculptors and the illuminators of our MSS. clothed the Blessed Virgin and St. Joseph in the everyday costumes of the men and women around them. The casual mention of what was to the writer personally familiar may always be trusted. But when he sits down to describe in earnest what we should all so much like to hear about, his fancy gets the upper hand, and he is wildly and grotesquely inaccurate. As a knight is always brave and a lady always beautiful, so a castle is always fair, a tower high and strong, and a palace rich and noble. It is in the details of these qualities and the translation from the abstract to the concrete that all sorts of extravagancies appear. And just as the knights in the stories slay hundreds with their single arm; turn, unaided, the tide of battle and decide the fate of empires by their personal prowess; as the ladies are endowed with impossible perfections, with complexions which shame the whiteness of the snow and the crimson of the rose, and with eyes whose brilliancy make the diamond dull and the sun himself a very second-rate affair; so the palaces and the towers of the author's imagination are invested with every variety of extravagant conceit.

Amongst such hyperbolic touches common enough to the minstrelsy of the Middle Ages the following is pretty well. The scene is the residence of "An Amiral," and is laid in Babylon, of all places in the world; and thus the faithful chronicler proceeds to portray its surroundings:—

> "About the orchard goeth a wall,
> The *worst* stone is crystal;
> The gravel in the ground of precious stone,
> And of virtue y-wis each one,
> Of saphires and of sardoines,
> Of onyxes and chalcedoines."

After such a "sweet and lovely wall" as this, and after garden-walks of precious stones, it is a little disappointing to find that the tower in which the beautiful princess is immured, although a thousand toises long and a hundred broad ("we *hope* here be truths") is merely built of "the purest marble with mortar so hard that no steel can cut it."

Some little recompense is, however, made us by the glory of the dome or cupola which surmounts the palace, and which is

> "Y-wrought with so much rede,
> That men no firen o'night burne
> Neither torche ne lanterne.
> Such a dome was never bigonne,
> *It shineth o'night as o'day doth the sun.*"

There is in all this an obvious reminiscence of the architecture of the East, which was doubtless known to the writer through the Crusades, and the dazzling brightness and beauty whereof must have lingered in the memory of many a listening knight and of his "menie" who followed him to the wars.

Now and then one meets in these old poems that one touch of nature which makes the whole world kin, and bridges over the gulf of five centuries. In one instance a lover is recommended to gain access to the tower where his ladye love languishes *par amour*, by assuming the character of an architect charged with the commission to build a counterpart of the tower in a far countree. Minute instructions are given as to the arts by which he is to cajole the warder, with whom he is to gamble and *lose*. There are perhaps some among our younger readers who will be pleased to hear that the pious fraud was entirely successful. When was sympathy found on the side of the father, and not with the lover who would rob him of his daughter?

In the romance of the "Seven Wise Masters," the architect of the period figures in a tragic part, and his fate reconciles us to many of the drawbacks incident to the present practice of the art. The professional gentleman in question was called in by a powerful knight and commissioned to design and build a castle of unusual strength. It was to have a very artfully-contrived arrangement of subterranean galleries, stores, magazines, and dungeons for the retention of unfortunate prisoners. These galleries were to form a sort of maze, to be approached only from one point of access, and the construction and disposition of them was to be kept a profound secret, even from the workmen, for the knight and the architect were themselves to fix the last seal to the work, the key of the whole mystery. The work was most happily accomplished in every particular, and to the entire satisfaction of the knightly patron. That is, with one single exception. The secret of the plan was shared by the knight and the architect, and this was one too many for perfect security. The architect *might* disclose the whole matter, and so, without more ado,

> "The knight quit well the service
> Of the mason for his quayntise.
> He *slew* him soon, that ilke day,
> For fear that he shoulde aught say."

A practical measure, no doubt, promptly conceived and carried out. The commission of the murder is related without comment or reprobation, and appears to have been regarded as a mere matter of prudent and business-like caution on the part of this "veray parfite gentle knight." The more we become acquainted with this personage through the medium of the old romance the more we are convinced that he was, with rare exceptions, an unmitigated ruffian.

There is,. fortunately, very little danger of confounding the imaginary architecture of the old writers when they wish to design something very fine with the real architecture by which they were surrounded. "A fair castle, with spacious orchards and gardens, and a bower, its spires surmounted by vanes, richly gilt and shining like the sun," is a picture which makes no demand upon our credulity, and one which we can recognise and trust; and so we can that of the old manor-house, "surrounded on all sides by a river or moat," and consisting—

> "Of chambers and of an high hall
> Of old work, for-crazed all."

The last line brings vividly before us the forlorn and rickety dwelling of the knight whose absence at Court or in the wars is felt in the neglected condition of his ancestral home. But the descriptions which bear the stamp of truth are not in sufficient detail to be of much use to us, and those which abound in detail are manifestly untrue.

A strange glare is occasionally thrown upon the social life of the Middle Ages by a chance passage or allusion, such as that which exhibits the Earl Gaston de Foix coming out of his chamber at midnight to sup, twelve varlettes holding twelve torches, which shed a lurid light on a crowd of attendant knights and esquires. We see, in fact, more of the interior of Mediæval dwellings in these old romances than of the exteriors; but here, again, the interior of one is the interior of all. Almost all the transactions of the household were conducted in the great hall, and one great hall was very much like another. At one end the entry, the screen, and lavatory; at the other the daïs, flanked by the great bay-window. In the middle, the brazier, and over it the louvre, soaring high up above the ridge, and garnished with vanes and gilding.

The same picture is presented to us over and over again with its main characteristics unvaried. The life of that time must have been full of *ennui*, and there is but little wonder that its depresing intervals of tedium and social stagnation should have been broken by wild bursts of revelry, and still wilder fits of savagery and slaughter.

When the prose romance succeeded the metrical romance, and when the invention of printing had reduced to a permanent form what had hitherto been but little more than mere floating tradition, the substance remained unchanged, and the courtiers of our Tudor sovereigns solaced themselves with long stories about giants and sorcerers, which would now be too improbable and incoherent for the entertainment of the nursery.

The feeling that the present time and its doings are unworthy of serious record, and that the Golden Age is always somewhere in the far-off past, appears to dwell eternal in the human breast. It has often formed the theme of the moralist,—from the eloquent protest of Macaulay in the closing words of his marvellous picture of the England of the Stuarts, to the impassioned appeals of Ruskin to find in the life about us, the matter for our pen and pencil. But there is probably little use in exhortations which appear to run contrary to a fixed propensity of our nature. We always magnify the past and underrate the present, and probably shall always do so. We printed but quite lately an appeal from one of the closest observers of nature to our artists to take their stand on the wharfs of the London Docks and see there the sights provided for their brush, instead of hanging about decaying Venice and painting for the thousandth time what has been painted for us often enough already. Long ago Mr. Ruskin pointed out that the only really historical painting is the painting of the scenes of our daily experience. But our painters are, as yet, but half converted. It is true that the finding of the dead body of Harold has dropped out of our catalogues; but sixteenth and seventeenth and even eighteenth century episodes absorb nearly all their attention, and the costumier and the old curiosity-shop play far too large a part in contemporary art. The marvels of our own day pass unrecorded while our artists are trying to imagine how the English archers looked at Agincourt, how Elizabeth received her courtiers and parasites in dresses which we hope were as uncomfortable as they were ridiculous, or how the belles and beaux of the last century talked scandal and drank tea in hoops and farthingales.

This indifference to what the passing hour supplies accounts for the dearth of pictures of the arts of the Middle Ages in our early writers, and hence that painful search which Sir Walter Scott truly says is necessary to arrive at any accurate knowledge about those arts.

The revival of classical learning dealt a death-blow to the romantic school, and replaced the dragons and goblins by a not less absurd mythology. The universal passion for travel brought England into constant intercourse with Italy, where the taste for Pagan literature and Pagan art had a hundred years the start of us. Chapman's translation of Homer achieved an immediate popularity, and thenceforth nothing went down but gods and heroes. As a matter of course the taste in architecture ran in classic grooves. All literary references to the art took an antique cast, and our indigenous styles failed to move the admiration of writers filled with the classic ideal. The romantic spirit blazed out again in Spenser, but his verse was an anachronism, and the obsolete phraseology and machinery a mere affectation. It is partly to this cause that we must lay the fact that the architecture of his great poem partakes of the extravagancies of his predecessors, and that gold and ivory and precious stones are his ordinary building materials.

The old romances furnish a clue to the daily habits, the manners, dress, household economies, and occupations of the Middle Ages, to all that pertains to the arts of love and war and the laws of the chase. But we cannot recommend to the architectural student a perusal of the weary lengths of tedious story in prose or verse with the hope that he will extract much profit therefrom. The buildings which failed to elicit the praises of the writers have happily endured to our day, and in their stones are sermons which those who run may read.

In following essays we shall have occasion to advert to the literary treatment of those edifices when they had themselves become antiquities, and so had graduated in the only school which can, apparently, confer a title to admiration.

THE CITY GUILDS, THE APPRENTICESHIP SYSTEM, AND TECHNICAL EDUCATION.

LONG before the formation of our London School Board, we advocated in these columns the principles embodied in the Elementary Education Act, conscious that such a measure was urgently needed in the interests of the country. Long, also, before the present loud cry for technical education was heard, we urged the matter upon the attention of the City Guilds, and roughly mapped out what these once *bonâ fide* but now nominal guilds of trade could do on behalf of our artisans and the skilled industries of the nation. We well remember how long it took before the City Companies could be convinced of the duties that devolved upon them, and it is a matter for regret that none of these guilds took action in the cause of technical education until an unmistakable note of warning was sounded in respect to their reform. Although the present movement on the part of a number of the guilds in voting funds for the establishment of technical colleges and schools, and awarding prizes for specimens of the best workmanship in particular branches of trade, is highly commendable, it would have come with a better grace had it preceded the threatened measure of reform, than coming after that warning. Indeed, it is more than probable that, had the City Guilds a quarter of a century ago united, and earnestly gone in for their own reorganisation, and for the cause of technical education, the present scheme of impending reform might never have been formulated. The City Guilds or Companies certainly for several centuries represented the skilled trades of London, and were composed of masters and workmen who were actual and efficient members of the crafts they respectively represented. It is needless to tell the story of how these old guilds degenerated from what they had once been, into merely nominal guilds of trade, becoming at last little more than political and convivial bodies, though performing functions in connexion with the corporation with which they were always associated, or formed a part and parcel of, from an early period. Whilst the Municipal Reform Acts of upwards of forty years ago led generally to the abolition of all the old guilds of trade in alliance with the corporations in the three kingdoms, the municipal body of London and its minor corporations remained untouched. For nearly fifty years, therefore, the Corporation of London and the City Guilds had ample breathing time to take counsel together and devise a scheme through which the old trade bodies might show good reasons for their continued existence. Unfortunately the opportunity was allowed to pass by, and now the City Companies are placed face to face with the report of a Royal Commission which has been sitting for three years, inquiring into the trusts of the companies and their adminstration.

With the merely political aspects of the reform of the City Guilds we have nothing to do in these pages, nor is it our intention to discuss them, but with the important question of technical education we have obviously much to do, for the building and cognate trades alone form no inconsiderable portion of our artisan population. How best to impart technical knowledge for the benefit of the young workmen of the future, and how the knowledge obtained can be efficiently applied with good results, are questions that deserve serious attention. Owing to the rapid advance of machinery for several years past, and its utilisation in nearly all industrial fields, our old skilled trades are being split up, and a minute subdivision of labour has taken place. The old apprenticeship system, adhered to and insisted upon for many centuries, is rapidly dying out. Indeed, in several trades it is disused, and certain short agreements and conditions between masters and youths take its place. In country towns the apprenticeship system in some trades is adhered to, but in London and other large cities the great majority of our building and other young workmen have never been indentured to the trades that they have partially acquired, or are in process of acquiring. Many youths obtain a knowledge of their trades by working with their fathers in certain workshops where boy labour can be utilised. Boys or youths at the present time are constantly passing from workshop to workshop, and from job to job, thus "picking up" their trade and gaining experience. In some places in the three kingdoms it is the custom of late years for fathers to bring their sons to the trade societies of which they are members, and have their boys bound or indentured to the society. This practice appears, however, to be more a matter of form than of real legal apprenticeship, although the youths thus bound may work under the character of apprentices for seven or five years, or until they obtain sufficient practical knowledge of their trade to commence as regular journeymen. We consider that it is a great mistake, and a mischievous one, that the system of apprenticeship should be disused. If through the modern exigencies of life, living, and trade, a seven years' apprenticeship were considered too long, the indentured servitude could be reduced to five years. To learn efficiently some trades seven years' servitude to a master is not too much. Under the old system of apprenticeship the master took an interest in teaching the youth his trade, or seeing that he was properly assisted by his foreman and workmen. The sooner the youth became useful, the more to the advantage of his employer. Under the present loose system, unless the boy is working alongside of his father it is no one's interest to assist him onward, and it depends upon his own efforts to obtain a knowledge of his trade as best he can. We may establish technical schools and industrial workshops in connexion with some of our large factories, as, to some extent, they have done on the Continent, but it is very doubtful whether the system will succeed as well as a regular system of apprenticeship, allied with technical education. Had the apprentices of the old school such facilities for obtaining technical or practical scientific knowledge as our young men of the present day have, our skilled industries would have long since attained a high state of perfection and our class of general workmen would be more plentiful in the country, instead of being rapidly disappearing, to the great loss of the community. The great value of technical education to our present-day workmen and those of the future will lie in the facilities they will be afforded in usefully applying it. This knowledge must not lie on the workman like Saul's plate on the shepherd boy, encumbering him instead of arming him. Let us look some of the difficulties straight in the face. A quota only of our young workmen can become foremen and masters, and the great majority must remain all their lives operatives. This fact would be no reason why all our young workmen should not still be ambitious to obtain technical knowledge. To understand drawing; to know the properties of stone, wood, bricks, lime, and mortar, the strength of materials, and the chemical or other changes that these undergo, their bearing power, and how they are affected by the action of other elements, is very useful, and may be, under certain circumstances, indispensable knowledge. The value of this knowledge, as we have said already, depends on how our workmen can apply it. If some of our simple trades are split up into several subdivisions, and if this disintegrating process continues in respect to other trades, it is evident our part-workmen of the present day or the future will not benefit as much as would our old class of general workmen. The part-workman who will only know a little bit of his trade, the one-sixth, or possibly the one-twelfth, is left no scope for applying his technical knowledge. The executive workman, however, who is able to set out any portion of the work of his trade and finish it, is the one, and he alone, who can truly benefit by the advance of technical knowledge as applied to skilled handicraft. There is no denying that machinery has been a boon in many ways, and has greatly benefited a large number of workmen in different trades, by lightening heavy and toilsome labour hitherto performed by the hands. It has cheapened the cost of production and the necessaries of life, while at the same time annihilating sundry old forms of manual labour and reducing the hands to poverty. There are without question certain drawbacks to the universal employment of machinery, and some of these we have indicated. Our present subdivided labour, which is the outgrowth of its application, is leading fatally to our workmen losing all interest in their work, which as a whole none of them can call theirs. What is made up of bits of the many, can never

afford enjoyment to the one contributing his small part. The stone carver or mason, who of erst gave expression to the face or form divine he embodied in stone, or who developed a panelled niche in masonry, impressed his mind upon his work, which may be interpreted as conscientious and enduring handicraft. Let us not run away with the fact that our workmen of old had not sound practical geometrical knowledge, though the cry of technical education was not heard in the streets in their time. The many massive and light and beautiful open-timber roofs which our British carpenters constructed in the Middle Ages go to prove that the problems of Euclid, and the application of the principles enunciated in his work, were practically acted on by our old master-workmen. Marvels in masonic construction, and in carpentry and joinery and other building trades, were executed by our Mediæval builders and workmen.

The age of steam has, however, introduced a new system of ways and means into our midst; and while availing ourselves of any benefits it brings us, we must not travel too fast or allow ourselves to be swept too far forward by the current of innovation. The traveller sometimes finds it necessary to retrace his steps to reach the straight road that leads direct to his destination. Little is performed well in the world, either in the building or other arts, that is not planned well beforehand. In respect to imparting and applying technical knowledge in behalf of our own workmen and skilled industries this principle also holds good. A proper basis must be laid for the structure we hope to raise. There is another important consideration which must on no account be lost sight of when considering the scope and application of technical education and estimating its value. If the stream is not so directed that its spread through the land will bring moral dealing and commercial honesty, the flow of the current will be in vain. The knowledge of how to work well will not suffice if the will to do it does not exist, and unless employers feel interested on the score of credit in turning out conscientious work. Unfortunately, in not a few branches of trade at the present hour there are many scamps, too much artifice, and but little honest art. Through the greedy practices of unprincipled employers in various branches of trade, the workmen are demoralised, and from the exigencies of their position they are unable to protest or rebel. The application of technical education, to be successful, must be assisted all over the country by employers who take a pride in turning out good work, and who will only employ well-conducted and efficient workmen. We will repeat once more that theory is good, principles are good, but the young workman must be afforded proper scope for the application of the scientific principles which govern his trade. It may be taken as a maxim that no school or college can make a practical workman, or afford that peculiar training and experience that can only be acquired in the workshop and at the building.

THE SUEZ CANAL IMBROGLIO: A SOLUTION.

THE Suez Canal negotiations, referred to in our last number, are still unconcluded. On the one hand, the ship-owners of the northern ports are not contented with the terms proposed by the London committee. On the other hand, the directors of the company have taken time to consider them. Meanwhile the Egyptian Government intimates that it must be consulted before the *status quo* can be legally altered; and behind the Egyptian Government the sanction of the Porte is required for any such change.

All this makes it the more important to understand what can actually be done by this country within the exact limit of the existing firman and statutes of the *Compagnie Universelle*. Mr. Conder has pointed out in the columns of the daily press a simple mode of issue from the *impasse*. The English Government hold 176,000 shares. According to the "statutes," no holder of less than twenty-five shares has a vote, and no number of shares can give more than ten votes to a single holder. Thus the small and the very large shareholders are equally deprived of voting power. On the other hand, by the "statutes" of the company the privileges attaching to the shares follow the possession of the certificate, in whose ever hands it may be found; and by the agreement by which the British Government bought the 176,000 shares, their right to dispose of any or all of them at any time is explicitly declared.

It is therefore only necessary for the English Government to sell a certain number of these shares, or to "dispose of them" in the hands of trustees, in order to command 7,000 votes. The largest number of shares ever represented at any meeting of the company (if the Khedive's shares which we hold are not counted) was 57,714, which could not quite make up 2,300 votes. Thus it is easily within the rights and the power of this country to remove the whole question from the field of politics, and to allow the shareholders of the company to decide on the conduct of its affairs, precisely as the shareholders of any great English or French railway, canal, or shipping company, are in the habit of doing.

No permission from either the Khedive or the Porte, and no concession or assent on the part of either M. de Lesseps, or of the other directors, is necessary to carry out this simple plan. It is within the four corners of the "statutes" of the company, and of the agreement between the company and the English Government. It is the plain matter of fact way in which all great public works are conducted. The fact that so many of the shares are in English hands is so far advantageous to this country that we may feel assured that no political step to our disadvantage could be taken by a public meeting in which the large majority of votes are in English hands. That would satisfy the national requirements; and as to those of navigation, all difficulties would disappear the moment that the company, by the means suggested, was put in the condition of fair representation of interests provided for by the firman and the statutes. It is probably owing to the fact that the procedures of the company to this time are only recorded in French, and are not very accessible in this country, that this view of the case has been so long neglected.

ARCHITECTURAL ASSOCIATION.

"PAPERS."

A PAPER on papers was read by Mr. E. Ingress Bell at the meeting of the Architectural Association on the 7th inst. The author said:—

It might have been supposed that the invention of printing, with all its marvellous facilities of reproduction, would have almost wholly superseded the practice of oral instruction. But this has not proved to be the case. Either because one is more impressed by what one sees and hears than by what one reads, or more probably from the presence of the element of personal curiosity, or for some reason unexplained, the address delivered in person maintains its ancient popularity.

If to the known number of papers read in London we add the suspected number of unrecorded instances, and then add a due proportion for all the considerable towns in the kingdom, we reach a total which is little less than amazing. And now the question arises, — What is the outcome of all this immense intellectual activity? That also is obviously unascertainable and incalculable. It is, no doubt, considerable. It may be greater than I suppose; but I still think matters may be so ordered that the result, whatever it may be, shall be augmented. A little streamlet, which has for ages trickled down the crag side unregarded, is caught in its descent by a modern philosopher, and by wise conservation and direction of its energy is set to turn certain cylinders, and to generate that subtle and mysterious current which gives off at a distance of a quarter of a mile an intense light,—white, brilliant, and abundant. Do you think that the broad and deep stream,—the ever-widening flood and torrent of "papers,"—papers social and scientific,—papers æsthetic, artistic, architectural, archæological, antiquarian, and amorphous, give out a light proportionately brilliant and abundant; or, are you of opinion that a great portion of this cataract of learned disquisition,—this oratorial Niagara, if I may so call it,—passes away in mere confused noise and runs to waste?

You may perhaps infer that I would abolish, or at least curtail, the practice of reading papers. Not at all. I think the custom may, with advantage, be extended. But first it must be systematised; and the attempt can better be made by such a society as this than by more august bodies. There are many lines of inquiry and subjects of collective study open to you which could not be pursued by other bodies without compromising their dignity. It has been noted that fewer books are written by architects nowadays than heretofore. There are compilations of various kinds, and some hybrid volumes which approach, as nearly as the proprieties will permit, the tradesman's illustrated circular. There is also but a feeble struggle for the prize essays on professional subjects, although prize designs bring up crowds of competitors. The further cultivation of the "paper" amongst students would go far to remedy this defect. It has been said that the way to understand a subject is to write a book about it; and I will engage that no one, however conversant he may have been with his theme, ever set to work honestly to prepare a paper about it without leaving off a wiser man than when he began. The incidental advantages attaching to this form of literary exercise are numerous and obvious, and have often been insisted upon. For my part, I confess that I think a little improvement is practicable, and I would ask your permission to suggest a few points for your consideration, with a view to conserve and systematise the forces at command. Although I wish to treat the subject in the abstract, and make my remarks as impersonal as possible, I must nevertheless keep in view the constitution and aims of the Association whose members I am now addressing.

Papers may be roughly divided into the following classes:—1. Those which embody the results of experience. 2. Those which formulate opinions. 3. Those which record observations. I might add a fourth division for those papers which resemble the later homilies of the Archbishop of Grenada, as reported by "Gil Blas"; but as papers of this class are never met with within these walls, their consideration need not delay us. The papers in the first class,—viz., those embodying the lessons of experience,—are analogous to the lectures of the University professor. It is not to be expected that many papers of this character can be furnished by the general body of the members, who, for the most part, have their experience to gain. Such papers will, as a rule, be contributed by members who, having passed through the ranks, are engaged in the active duties of their profession. A few questions may follow such papers to elicit further information; but we should listen to their authors as to experts, and take thankfully the fruits of their long years of study and practice. The second class of subjects,—viz., those which formulate opinions,—are almost equally unsuited for treatment by young men. Opinion, to be worth anything, should be based upon experience, and experience comes with age. The opinions of young men are necessarily immature and notoriously unstable, their instability being only equalled by the confidence with which they are advanced. If this were a mere debating society, any subject would serve as a field for the practice of dialectics, and as a school for acquiring the art of public speaking, but it aspires to more practical ends, and merely speculative matters should absorb but a small part of our attention. We now come to the third class of papers,—viz., those which are the records of personal observation. This is a class of paper peculiarly fitted for the members of the Association, and one which should, it is thought, be more assiduously cultivated. Every year the seekers after knowledge go further afield, and every year the search grows more keen. Nothing would so much sharpen observation and help towards systematising the results as the knowledge that it was to be put into shape for the benefit of fellow students. If the experiences of such were embodied in a compact and business-like paper, illustrated by equally business-like sketches, the greatest possible benefit would accrue to all concerned. For such a form of literary and artistic exercise is twice blessed,—"It blesses him that gives and him that takes."

It is rarely the case that architects in full practice can afford the time to prepare papers for the edification of their younger brethren in the profession, although they all, no doubt, have the will. But that many of them would furnish the necessary materials for the compilation of such papers I have no doubt. And there could be no better exercise for a young man than a careful study of the works of any architect who had shown himself a master in some special work of art, whether ecclesiastical, domestic, civic, or what not, with the view of ascertaining the secret of his success. A series of working drawings of Board schools, for instance, would

form a most valuable exhibition, and it would be invaluable if accompanied by a carefully compiled account of the principles embodied in the several designs, the accommodation secured, the difficulties of site or foundations surmounted, the constructive methods adopted, and the cost. A similar series for science schools, or for municipal buildings, for markets and other important works, might follow at decent intervals, and would provide an educational exercise of the highest value. It is not likely that the members themselves could, from their own practice, obtain the materials for this form of paper; but I should be much surprised if the courtesy which always allows the members of the Association to inspect actual works in progress, stopped short of rendering facilities for this sort of comparative examination of the several works of the more successful architects of the day. Criticism should, of course, be suppressed; the object being to learn from the successful works of an acknowledged master the lessons which his works convey.

There is still another field open to the earnest student. From time to time books are published which embody the thought and work of a life; books which are too expensive for a young man to buy, and if read and studied thoroughly, as they deserve to be, would take up a larger share of time than in this busy age is likely to be spared for the purpose. It would be not only a profitable exercise for the individual, but a wholesome economy of the energies of the general body of students if one, to whom the requisite facilities required be given, would master the subject, reduce it to a *précis*, and give an intelligent verbal rendering of it, with appropriate comment and illustration. With some such modification the "paper" may not only retain its strange attractiveness, but become increasingly useful. In conclusion, I admit without reserve that I am a shocking example of the system I deprecate; but I shall be content to account myself the last and worst specimen of a faulty system if, by drawing attention to this matter, I can be the means of inaugurating a better.

In the discussion which followed, the chairman (Mr. Cole A. Adams, President), and Messrs. Stannus, Gotch, H. W. Pratt, Brodie, Baggallay, and Ellison took part. The value of the suggestions contained in the paper was admitted by all the speakers, though one or two gentlemen questioned the practicability of carrying the whole of them into effect. A hearty vote of thanks was accorded to Mr. Bell for his paper (of which the foregoing are only the leading passages), not only for the matter it contained but for its pleasant and effective delivery. It was said by one speaker that only about one architect in every ten could write a paper, and that only one in twenty could read a paper when it was written. Mr. Ingress Bell, as was said, can do both well.

EGYPTIAN CHARACTER AND EGYPTIAN ART.

IN the remarkable address which he delivered to the Royal Academy students on Monday last, Sir F. Leighton dwelt on the relations of artistic production to the conditions of time and place under which it was evolved, and the characteristics of the race to which it was due. We reprint his remarks on the Egyptians and their art:—

Here, at least, the problem of evolution is reduced to the simplest form known to us west of the cradle of our race, though not to the simplest form conceivable; for although one branch of Egyptian art, sculpture, had reached a very high,—perhaps its highest,—level between 3,000 and 4,000, or, according to Mariette and Maspero, between 4,000 and 5,000 years before the Christian era, the Egyptians were not, it is believed, indigenous on the Nile. For our present purposes, however, they may be considered practically a primitive race. What manner of people were they? They were a people endowed with brilliant gifts, and of whom a prominent characteristic was their piety. "The Egyptians are religious," says Herodotus, "far beyond any other race of men." Piety was printed on all their works. They believed in an after-life, and on that after-life their thoughts were chiefly bent. They traced to the heavens the origin of their royal throne, and believed that in a far, unchronicled past the gods themselves had ruled within their land; the right hand of the immortals was extended over them in protection; their pontiff kings visibly represented the godhead upon earth, and at their death were in their turn taken up into the heavenly ranks. They were a race which during long centuries,—those early centuries in which its arts took shape and ripened,—grew up in unchallenged peace to strength and conscious greatness, knowing as yet no rivals, drinking in daily the deepening sense of a security unassailable and immemorial. Visibly favoured in a climate beyond example steadfast and serene, and in a soil lavish of every gift, they were above all made confident in the sight of generation after generation of the ever renewed blessing of the great stream in whose waters that soil was each autumn born anew; and so to the sense of abidingness would add itself that of unexhausted wealth and plenty. I said that they were pre-eminently pious,—dwelling constantly in thought on the life of which the gate is death. We need not enter here into their complex creed concerning the soul and the intelligence, the body and its double; it is enough for us to note that in their belief a material form was needed after death as a home and resting-place, until the day of doom, for that surviving "double," — that *eidolon*,—which was an incorporeal counterpart of the body. To furnish this tenement for the double was, therefore, a sacred duty, and it was accordingly provided in two ways: first, by enbalmment of the corpse itself, and, further, for the event of injury to the mummy, by the manufacture of stone or wooden counterfeits made in its exact image, and for greater safety these were frequently very numerous. Such, then, being the mental attitude and such the custom of a race with strong plastic and building instincts, what sort of art should we look for in it? Should we not look for an art in which the temples of the gods and the abodes of the dead were the most salient feature? And should we not further expect of such a people that whatever connected itself with the glorification of those gods, or with the exultation of earthly rulers scarcely less divine, or with the service of the departed, would be the inspiring motive of their graphic and plastic art, as well as of their architectural production? And this art, being an entirely spontaneous and sincere expression of the national temper, should it not convey to us a sense of strength, of dignity, of stability, and of repose? And would not the consciousness of unlimited resources find expression in a tendency to the excessive in size? Well, these are precisely the characteristics which we never fail to find in the monuments of Egypt, and in so much of her plastic art as is not purely domestic in character and descriptive of private life. Those whose fortune it has been to stand by the base of the Great Pyramid of Khoofoo and look up at its far summit flaming in the violet sky, or to gaze on the wreck of that solemn watcher of the rising sun, the giant Sphinx of Gizeh, erect still, after sixty centuries, in the desert's slowly rising tide; or who have rested in the shade of the huge shafts which tell of the pomp and splendour of hundred-gated Thebes, must, I think, have received impressions of majesty and of enduring strength which will not fade within their memory. But if the general character of these monuments bears the impress of the moral temper of the Egyptian people, we shall find a special requirement of their faith exercising a direct and vital effect on the development of their sculpture and of their painting,—in the case of the former, first for good, and afterwards, indirectly, for mischief. I mean the duty which, as I have told you, they hold sacred, of supplementing the embalmed corpses in the tombs with images of the deceased in stone or wood. Out of this duty arose necessarily a vast activity in the field of sculpture; but the object of the artist was to produce, I said, in these images an exact counterfeit of the outward form and features of the departed, in order that the second life,—the life in the shadow of the tomb,—might mimic as faithfully as possible the old life in the light of day, and the result was, as might be expected, a remarkable development of individualisation in treatment of form and figure; in fact, a vigorous and uncompromising school of portraiture. This view of the causes which influenced Egyptian sculpture in its origin is very lucidly set forth in the admirable work of Messrs. Perrot & Chipiez, which I commend to your study, and in which you will find it supported by a series of most excellent illustrations. While, however, so large a demand for works of sculpture had a very stimulating, and, at first, a very wholesome effect on plastic art, the very extent of that demand became eventually a source of harm, and we may safely attribute to it some not small share of the stagnation and eventual decline of this branch of art on the banks of the Nile; for, in exact proportion to the necessity for rapid and almost unlimited production would the obstacles to thoughtful treatment and a close study of nature increase, the sculptor would fatally tend to become a mere manufacturer and purveyor, and in the speed to which he was compelled, life and character would more and more surely disappear from his work. Be this as it may, we see in Egypt this strange thing, that the earliest efforts of sculpture which have come down to us are in general the best. Certain wooden panels, for instance, carved in low relief, which are preserved at Boulaq, and which display a delicacy of workmanship and a spontaneity of treatment seldom equalled in Egyptian art, are believed by M. Maspero, under whose guidance I had the good fortune to see them, to date back to the third dynasty,—that is to say, to over forty centuries before the Christian era. And the qualities which distinguish the most perfect phase of this art are precisely a subtler perception of individuality, and a more unreserved obedience to nature, than we see at any subsequent period. Our acquaintance with this epoch of Egyptian art is of very recent date, and it had been till quite lately much the custom to take an exaggerated view of the stagnancy of Egyptian sculpture to which I just now alluded. A truer appreciation, both of the achievements of that art and of the phases through which it passed, is now beginning to prevail; meanwhile we must, I think, be on our guard lest we now fall into an opposite error, ignoring unduly the limitations from which the sculpture of Egypt never freed itself, and forgetting that if in fifty times a hundred years it underwent marked and considerable modifications, those changes did not bring improvement with them after a certain early period. Of this arrested growth the causes must in great part remain obscure; the explanation which I have suggested, and of which I would not overrate the bearing, applies only to funereal art, and though no doubt the whole current of plastic production would be affected by the vicissitudes of its main affluent, we must look for other causes to account for the strange and pulseless monotony which we see in the treatment of the statues of the gods. One of these M. Perrot is inclined to seek in the necessity imposed on the artist of representing those gods as a monstrous compound of man and beast, a necessity which shut him out from any inspiring ideal; much, again, of the absence of action in Egyptian statues, and of the empty smoothness which so often characterises their modelling, he attributes to the extreme hardness of the material in which they are habitually wrought, and which, while lending itself to a high polish, was extremely difficult to carve. To these causes we may add the absence of any fecundating contact with other races. But behind and beyond them all, we must recognise as the primary agent a certain peculiarity and inertness of the race, a narrow but tenacious spirit of which, whatever may be its sources, we find the perfect counterpart only in the great Turanian Empire of the East,—the not less ancient land of China. I could have wished to say, also, in this place, a word on the harmony which exists between Egyptian building and the scenery in which it is set, but for this time leaves me no leisure; I have yet, before passing to other lands, to glance briefly at Egyptian painting. Of this our knowledge is drawn wholly from the tombs. Like sculpture, it owed its chief impulse to the views of the Egyptians in regard to a suspended life within the grave; for not only were meat and drink laid for their sustenance before the dead, but, just as to the mummy were added supplementary semblances of the body, so also was the painted semblance of food placed about it in its long abode; nay, more, as the ghostly inmate could no long wander forth into the world, the world was piously brought in effigy to him in the tomb, and on the walls around him he saw unfolded each scene of daily and domestic life, in the sight of which he might once more seem to himself to sow and to reap, to count his hoarded gain, to carouse, and to rehearse in all things his vanished earthly days. Here, more than elsewhere, we find the

Egyptian artist untrammelled by material, and we are accordingly struck with an increased vivacity of dramatic treatment and the greater freedom with which he handles the human form; here, too, we note a certain cheerful *bonhomie* which was a characteristic of the race. I have spoken of these designs as paintings, but they would be more accurately described as outlines filled in with colour; for throughout Egyptian art colour appears solely as a flat tint. It is a prevalent opinion that the Egyptians were colourists; skilful harmonisers, that is, of subtle tints. In this opinion, though not unmindful of the harmonious effect of some of their enamels in which the original tints are still preserved, I find some difficulty in concurring; faded and bleached by the sun, the coloured hieroglyphs which still enliven some of their buildings are no doubt very delightful in their play of tones, and to many paintings on papyri or on mummy cases decay or golden resins have given the delicacy of fresco, or a glow as of mosaics; but the sight of well-preserved paintings of comparatively recent discovery has left grave doubts in my mind in regard to the colouristic aptitudes of the people which produced them. This, however, is worthy of notice,—that we see in Egyptian painting the first use of that combination of green and blue which was to be the dominant note of so much that is most beautiful in Eastern coloured decoration.

THE ROYAL ACADEMY: STUDENTS' DESIGNS.

The works executed by the students of the Royal Academy in competition for the various prizes offered were exhibited to public notice (as usual each year) on Tuesday and Wednesday in this week, in the Burlington House Galleries. The general average of the work appeared to us, on the whole, hardly so good as in some other years. There could be no question as to the propriety of the award of the gold medal and travelling studentship for historical painting, which was won by Mr. W. M. Loudan; the subject, "Peter denying Christ." This was the only one that rose to anything like a thoughtful rendering of the subject; the attempt to render the expression of mingled fear, and shame of his own cowardice, in the face of Peter, seated apart in a corner and discovered by the accusing damsel, must be highly commended. The remainder of the competitors seem hardly to have aimed at more than effects of light and grouping, in some cases very stagy. In the oil landscapes, illustrating a verse from "In Memoriam," painted for the Turner Gold Medal and Scholarship (50*l.*), the successful candidate was Mr. Rickatson, whose work seemed the best on the whole; but we may observe that only one among the paintings, that marked No. 8, really illustrated the landscape described in Section XI. of "In Memoriam," a view from an eminence over a wide plain stretching to the sea. The rest of the competitors seem to have taken the verse given them, without looking at the verses collectively. In respect to the rendering of the tones of early morning, No. 8 (author's name not given), seemed to us superior to the rest, and at least very well meant. The Creswick prize,—subject, "An Old English Country Inn,"—was given to Mr. Olivier for what was undoubtedly the best of the set, but with too much inn and too little landscape to realise quite what one expected from a painting for a prize bearing the name of Creswick. Passing over some of the other groups, we noticed the drawing by Mr. Margetson, for which an extra prize was given, for a full-size study of a draped figure, as distinctly the most thoughtful and artistic in feeling of the set, certainly more so than the rather theatrical figure of Mr. Grieffenhagen, to which the first prize (silver medal and 25*l.*) was awarded. The Council did not award the first prize for design for a figure subject in monochrome (St. Sebastian was the subject given); the collection is neither so large nor so clever as last year. The life studies in crayon were quite up to the usual standard, and the central study among the six for which the first prize was given, by Mr. J. E. Breun, a drawing of a half-recumbent female figure, was not only a very good drawing, but had the additional excellence (not often met with in Academical life studies) of being a really expressive drawing with a good deal of sentiment in it; a drawing which might be regarded as a work of pictorial beauty and not a mere prosaic copy of a figure. The award for painting in oil from the life was not made: the competition did not appear to us inferior to those exhibited on other occasions when the award was made; but no doubt the Council are right to make the standard high for this most important and difficult section of work. They do not seem to be so exacting about architecture; we must say decidedly that the prize for original architectural design represents 200*l.*, and a gold medal very easily earned; and if this is the best response to the best prize for architecture, it is evident that architecture at the Academy wants brushing up a good deal. Mr. R. T. Blomfield won the first prize for designs for "a London House," a very picturesque front rather weakly constructed, mostly resting on an elliptical arch.

EXHIBITION OF DECORATIVE ART.

An exhibition, including tapestry from the Windsor Tapestry School, wood-carving arranged by Mr. Rogers, and wrought-iron work, is open free, at present, at the rooms called the Mediæval and Industrial Art Studios, at 175, Bond-street. The tapestries may be said to be good work done in a wrong school. They include landscapes, or figure-subjects with landscape backgrounds, realistic in treatment. A great deal of tapestry has been executed on this principle, but the adoption of tapestry for such purely pictorial treatment cannot be defended from a critical point of view. The best-executed *scene* in tapestry looks coarse and wanting in that delicate blending and shading off of tones which brush-work alone can give. Landscape, especially in tapestry, is to us almost offensive, except as an antique curiosity to be judged of apart from its purely artistic standpoint. As art, it is only an attempt, very unsatisfactory at the best, to do what the material cannot possibly effect. And the treatment of realistic figure-subjects is, for similar reasons, but in a less ratio, a necessary failure. The style of work which can really be executed in tapestry with effect would be a more conventional and flat method of treatment, in which, for instance, figures were interwoven with elaborate decorative design, not attempting to be pictorial. There seems to be plenty of good workmanship available at Windsor; what is wanted is that it should be directed into a better channel, into a type of design more suited to the material.

The collection we are speaking of also includes some examples of a new method of decorative effect, for screens and panels, by a metallic solution applied to natural leaves, flowers, and sprays, whereby they are, as it may be said, fossilised in metal, on a ground of wood or other panel. This is not, of course, *design*, it is a process merely; but it seems capable of realising some rich and rather novel effects.

The exhibition of wood-carving in the upper gallery of the same establishment is arranged and partly contributed to by Mr. G. A. Rogers, and is a kind of sequel to that which was arranged under his supervision in the Albert Hall in 1879, and which we commented on at the time. The collection, chiefly of objects lent, illustrates some of the greatest refinements of the art of wood-carving, as well as its bolder style. The quality of high finish is especially perceptible in the medallion-portrait of Charles II., by Grinling Gibbons, which is a masterpiece. Some of the very minute and delicate boxwood carvings, lent by Mr. Spread, ovals which look as if meant for personal ornaments rather than for the ordinary positions of wood-carving, are wonderful in execution, but they are curiosities and *tours de force* rather than true wood-carving. Among the examples of the opposite type, of bold grandeur of style, one of the finest is the panel of a Flemish altar-rail, lent by Mr. Spread (No. 35), in which the ordinary forms of Renaissance foliage ornament are treated with the greatest freedom and vigour; this may be compared with the Jacobean panels near it (No. 33), which are exceedingly neat and finished, but look tame and mechanical both in design and execution beside that bold piece of flowing work of the earlier and higher Renaissance type. Among the pieces which, we presume, are by Mr. Rogers himself, the most important is a carved oak chimneypiece, very fine in style, and not over-finished with surface work. Two ovals of snipe and woodcock, by the late Mr. W. G. Rogers, are lent by Mr. Beaumont; these are obviously in emulation of Gibbons, and not far behind their model. Two figures, carved by Hogarth when an apprentice, are among the curiosities of the exhibition, which we should have been glad to have commented on at greater length did time and space permit.

The collection of wrought ironwork, under the superintendence of Mr. A. Newman, we shall speak of more particularly next week. It contains some very beautiful and interesting work.

TWO NEW CITY THOROUGHFARES.

It is expected that the new street, with a railway beneath it, from Great Tower-hill to Eastcheap, will be opened for traffic on the 1st of January next. We may point out that the scheme for this straightened approach is by no means novel in its conception. In a plan of 1766, set out by J. Gwynn,—who, indeed, seems to have had quite a prophetical eye for the improvements of an after-age,—the thoroughfare is clearly foreshadowed. We see it as a wide street, reaching from the eastern end of Cannon-street to the north-western angle of Tower-hill, by Trinity-square, absorbing both Little and Great Eastcheap, together with Great and Little Tower streets.* The subsidiary alterations indicated in Gwynn's plan leave untouched all the church sites in this quarter, such as St. Martin's Orgar; St. Michael's, Crooked-lane; St. Dionis; St. Benet's Grasschurch; St. Dunstan's, St. Olave's, and All Hallows. But situations are laid down for a new Navy Office at the east of All Hallows Barking, to replace the building then existing in Seething-lane,—the Navy Office of Samuel Pepys's and the Earl of Sandwich's time,† as well as for a new Victualling-office where the Royal Mint now stands. The victualling-offices were subsequently appropriated for the Government tobacco-warehouses. These in their time gave way to the Mint buildings, erected here 1806-1811, by Johnson and Smirke, since the Tower, where our coinage had been produced ever since the days of King Edward I., no longer afforded room for the works. The Mint cost altogether nearly 262,000*l.*, and was almost totally destroyed by fire on October 31st, 1815. The original Victualling-office had succeeded that East Minster, or Abbey of Our Lady of Grace, in which King Edward III., grateful for a safe return from France, hoped to rival and excel the other great Minster in the West, where so many of the Plantagenets are laid. But considerable changes are contemplated by the plan in Lower Thames-street. It was proposed to widen that street, and to build an arcade along its northern side more remote from the river, having at the middle point, just south of St. Dunstan's Church, a fresh Custom House, instead of that (being Ripley's and the fourth one built here) on the opposite side of the road, a little further eastward.

So, similarly, with Throgmorton-avenue, now being made through Drapers' Gardens. A plan prepared for the Corporation, and dated 1802, delineates a fine wide street to join the then projected Finsbury-circus (site of Bethlehem Hospital, Moorfields) with the end of Throgmorton-street and so by Bartholomew-lane to the Royal Exchange.‡ That street, it should be observed, passes over Bell-alley, Three Pigeon-alley, Angel-court, Copthall-court, and Drapers' Buildings, and to the west of old Carpenters' Hall and Garden at the London-wall end. The Avenue is laid to the east of the former Hall, which has been re-erected in the immediate vicinity. Moreover, an earlier scheme of J. Gwynn, 1766, embraces two thoroughfares from Throgmorton-street to a new street running south of and parallel with London-wall, these thoroughfares passing at either side of Drapers' Gardens, which they leave intact. Rather more than two years ago, Mr. Bassett Keeling's designs were accepted for continuing the eastern portion of King's Arms Yard, Moorgate-street, as a carriage-way into Tokenhouse-yard, Lothbury. This involves

* The railway-shaft facing No. 14, Trinity-square,—in which the Scottish noblemen were lodged on the eve of their execution in the years 1746, 1747,—marks the exact position of the scaffold.

† Established *temp.* Queen Elizabeth for the stores collected by Sir Wm. Wynter, who was appointed "Surveyor of our Ships" by patent of Edward VI.; and sold in 1788 for 11,500*l.*

‡ John Luffman's plan shows an intended continuation of this from the other side of the Exchange in a direct line to the foot of (old) London Bridge.

the demolition of some fine old merchants' mansions, one dating from the middle of the seventeenth century, and all, like the new restaurant, occupying land leased from the Mercers' Company, to whom Sir Richard Whittington devised it in trust. Noteworthy together with these specimens of the houses in which City traders were once content to dwell, and at no sacrifice to their personal comfort, are twelve in the adjoining Warnford-court, which are also being pulled down. Built in 1667, just after the Great Fire, on a site sold by the Grocers' Company, these have to yield to the more expensive and more showy tastes of the present day. One of them, No. 6, is remarkable as having been the residence of George Peabody when occupied with business in London. Mr. Reilly, of St. Swithin's-lane, is the architect for the new offices. Standing on the site of a house and garden that belonged to Lord Arundel, Tokenhouse-yard was built *temp.* Charles I. by the celebrated Sir William Petty, one of our earliest authors on political economy. Undertaking the survey of Ireland in the year 1664, he had in sixteen months' time completed the measurement of two million eight thousand acres of forfeited lands. For this work he had contracted to receive 1d. per acre, and did actually obtain an estate worth 6,000*l.* per annum. By her marriage with Thomas, twenty-first Lord of Kerry, created Viscount Clanmaurice and Earl of Kerry, his daughter Anne became ancestress of the present house of Fitzmaurice, Earls of Lansdowne. Tokenhouse-yard is believed to derive its name from the manufacture here,—in close proximity to the brassfoundries of Lothbury,—of the metal tokens which, during the sixteenth and seventeenth centuries, supplied the great deficiency of copper halfpence and farthings.* Throgmorton-street, where the Drapers settled in 1541, purchasing of King Henry VIII. the house and garden-ground of the attainted Thomas Cromwell, Earl of Essex, is so called after Sir Nicholas Throgmorton, whom Dudley, Earl of Leicester, is said to have poisoned. This Company, third on the list of our civic guilds or masteries, dates from about the year 1330, when they had established themselves at Cornhill. Their next hall, in St. Swithin's-lane, is first mentioned in 1405, when we find particular entries of the lordly feasts for which they were long pre-eminent, and of an apartment they yet retain, namely, "The Ladies' Chamber."

DISCOVERY OF ROMAN ANTIQUITIES.

FIVE Roman mile-stones have just been found on a piece of land not far from Ladenburg, near Mannheim; valuable antiquities having been discovered in the same place in the sixth decade of this century. Ladenburg (originally Vicus Lopodunum, later called Civitas Ulpia in honour of the Emperor Trajan, and finally known as Civitas Ulpia Septimia Nemetum, after the Emperor Septimius Severus) was the centre of a right-Rhenish Roman administrative district until the middle of the third century, when Roman supremacy on the right bank of the Rhine was overthrown by the Alemanians. From this centre, the roads of the Romans spread to Worms, Heidelberg, and Speier, and all the mile-stones of the municipal district refer to the chief place, Ladenburg. The eight Roman league-stones found six years ago at Heidelberg bear the words A.LOP(oduno) L(eugae) IIII, from Lopodunum 4 Gallic leagues = 6 Roman miles = 8·89 kilomètres. Like the Heidelberg mile-stones, those of Ladenburg contain the names of a whole series of Roman emperors, as will be seen from the following inscriptions:—

I. Set up in honour of the emperor Gordian III., in A.D. 238:—

//////////	
IIII ·CAES	Imperatori Caesari
M·ANTONIO	Marco Antonio
GORDIANO	Gordiano
PIO·FELICI·AVG	Pio, Felici, Augusto
P·M·TR·P	Pontifici maximo, Tribunicia potestate
P·P·C·S·N	Patri patriae Civitas Septimia Nemetum
L·I	Leuga I

(This stone was either marked erroneously L·I = Leuga una or prima, or brought from its original position, half an hour's walk from the centre, to its present one. The fact that the base is wanting is in favour of the latter supposition.)

II. Set up in honour of the emperor Philippus Arabicus and his son of the same name, "the imperial crown prince" (Nobilissimus Caesar), in A.D. 246:—

IMP//////////	Imperatori Caesari
M·//////////	Marco Julio
PI //////////	Philippo Pio
F·AVG////////	Felici, Augusto, Tribunicia
P·I//////////	Potestate III, Consuli
E·I//////////	et Marco Julio
PH//////////	Philippo
NOB·//////	Nobilissimo Caesari
C·V///Λ	Civitas Ulpia Septimia Nemetum.

III. Set up in honour of the emperor Decius, in A.D. 249:—

IMP·CAES	Imperatori Caesari
G·MESSIO	Gaio Messio
QUINTO	Quinto
TROIANO	Trajano
DECIO·P·F	Decio, Pio, Felici,
INVICTO	Invicto
AUG·P·M·T·P·P·P	Aug., Pont. max., Trib. pot., Patri patriae
PROCOS·C·S·N	Proconsuli Civitas Septimia Nemetum.

IV. Set up in honour of the younger Decius, the heir-apparent, A.D. 250:—

Q·HERENNIO	Quinto Herennio
ETRUSCO	Etrusco
MESSIO·DECIO	Messio Decio
NOBILISSIMO	Nobilissimo
CAESARI·C·V̂L·S·N	Caesari Civitas Ulpia Sept. Nemetum.

V. Set up in honour of the emperors Valerian and Gallienus, in A.D. 254:—

IMPP·CAESS	Imperatoribus Caesaribus
P·LICINIO	Publio Licinio
VALERIANO	Valeriano
ET·P·LICINIO	et Publio Licinio
GALIENO	Gallieno
PIS·FELICIBVS	Piis, Felicibus
AVGG·C·V·S·N	Augustis Civitas Ulpia Sept. Nemetum.

The above inscriptions, all, with the exception of the second, well preserved, correspond with those found in 1877 at Heidelberg, which were described by the well-known antiquary, Herr Karl Christ, of Heidelberg, in the *Bonner Jahrbücher*, lxi. 10 and lxiv. 62. It is hoped that three other league-stones (erected in honour of Elagabalus, Severus Alexander, and Maximinius) will be ultimately discovered. Large stone slabs, over 2 mètres in length and 30 centimètres in thickness, and a large square stone, are still lying, at a depth of about 3 mètres, in the same place at Ladenburg, and it may be supposed that much is hidden beneath them.

* See Burn's catalogue of the Beaufoy Cabinet in the Guildhall Museum, and J. Y. Akerman's work on "Tradesmen's Tokens current in London 1648-72," 4to., 1849.

LUTHER'S CONVENT IN ROME.

ALL roads, says the old proverb of pilgrim days, lead to Rome, and many of that yearly increasing crowd who at this season,—some invalids, others pleasure-seekers,—flying our northern winter, flit southwards will, we may be sure, long before the snows have made their appearance with us, be enjoying themselves under the pleasant Italian sky on their first stay in the Eternal City. Of that number how many, we wonder, when they visit the famous Pincio, looking down over the panorama at their feet, and immediately below, the Piazza del Popolo with the conspicuous group of Sta. Maria del Popolo, are aware that in the adjoining convent, no longer the home of its former occupants, the Augustine monks, once resided during his short residence in Catholic Rome the great champion of the reformed religion, Martin Luther. It is a memory which the devout Roman Catholic would endeavour to forget, but history, with its inexorable rigour, can never pass by what to the Protestant visitor to Rome should add a ten-fold interest to the church whose pompous marvels are shown with so much pride.

Guide-books and *ciceroni* never fail to draw the attention of the visitor to the splendour of the Chigi chapel, the frescoes of Pinturicchio, the marbles,—with all their fascinating Italian names, *verde, giallo, nero antico*, and how many others,—of the Cibo chapel, the architecture of Bernini and the sculpture of the Renaissance; and, truth to say, of his visit to Rome the stranger cannot fail to bear away a vivid recollection of the interior effect of Sta. Maria del Popolo. The painters have long known the beauties of the church; but just now, the pavement of the old church will be found in the afternoons almost unseemingly strewn with painters' easels,—we are not exaggerating when we say a dozen or two,—before which are sitting chiefly young lady-artists depicting the interior beauties of the church. It is a little singular that while thus Sta. Maria del Popolo is crowded with sketchers, the even more suggestive church of the Ara Cœli is as deserted and sombre in its romantic silence as when, tradition tells us, its solitude suggested to Gibbon the theme of his great work on the Decline and Fall of the Roman Empire. It is not, indeed, to the Catacombs that the lover of silence should repair in the Rome of to-day, but to the church at the top of the steps leading up to the Ara Cœli side by side with the broad flight of the Capitol stairs.

While to the architect, the painter, and the antiquary the interest of Sta. Maria del Popolo is written in every stone, there is an event connected with the history of the church, recalled by no tomb, by no fresco, by no tablet, but treasured by tradition, the residence of Martin Luther in the adjoining convent. Luther's visit to Rome occupies an important place in the life and teachings of the great Reformer. Luther had but recently been appointed,—by the advice of the benevolent Staupitz, so long his spiritual adviser,—professor of philosophy at the new university which had been founded at Wittenberg by Albert of Saxony, the Weiss König of Albert Dürer and Hans Burgkmair. It was shortly after this, in 1511, that Luther was sent to Rome on business relating to the administration of the order of the Augustines in Germany. Arrived in the city of the Popes he was lodged in the convent near the Porta del Popolo. He stayed only a few weeks, but it is from this brief connexion with the history of his eventful life that there attaches an additional interest to the hallowed shadow of the now-deserted convent where once resided during his short visit to Rome, the young Augustine, "Frate Martino," the Martin Luther of Protestant history, who more than once, as he himself relates, celebrated mass at the altar of the Gothic Church of Sta. Maria del Popolo.

THE UNCOVERING OF THE FAÇADE OF THE CATHEDRAL OF FLORENCE.

THE façade of the Duomo of Florence, begun seven years ago and finished from its base to the crowning point, was uncovered to public view on Wednesday, the 5th of December. The ceremony was a very undemonstrative one, no enthusiasm was shown, and it was accompanied by an expressive silence.

The original design by the architect, the late Emilio de Fabris, was that terminating in the three gable points; but on its being exhibited, it elicited so many grave objections that he determined to finish it to the height of the balustrade that runs round the cathedral, and leave the style of completion to be decided by the public, whether it should be tricuspidial or basilical. Accordingly two erections in wood have been arranged; that on the north-west side has its terminal and lantern; that on the south-east the basilical style, with its balustrade like that running round the other parts of the edifice. The fervour of discussion on the subject of the crowning of the façade runs as high as a political point in the time of the Guelphs and Ghibelines.

The majority will be found in favour of the Basilican style, the gables losing ground every hour the more the effects are studied. The objections to the latter are very decided. Standing a few hundred yards from the north-west point of the façade, and looking towards the east, the beautiful line of Brunelleschi's cupola is cut up cruelly by the gable and the unmeaning cage-like lantern; while, if adopted, the Campanile of Giotto would suffer equally from the confusion of styles thrown so close to it. Precedent examples are named, by those favouring the three gables, of the façades of Orvieto and Siena; but neither possesses a cupola or campanile* like Santa Maria dei Fiori of Florence.

As it now stands, the balustrade carried on at

* Like many other persons, our correspondent does not seem to be aware that the Campanile itself was intended to have a spire, and that, in its present state, it is unfinished.

the same height as that of the north and south sides, comes too close on to the niches of the twelve apostles.

Objections may be made to the minuteness of the decorative part, to the want of depth of the portals, which, compared with those of Orvieto and Siena, are very inferior; also to the size of the four lower niches, in which the statues of the four dignitaries of the Church who at different periods blessed the building of this church, from its foundation in 1296, to the blessing of its temporary façade in 1446. These seated figures seem somewhat over-ponderous. All the statues placed in the niches, works of Florentine sculptors, are in plaster only; modifications might therefore be made when putting them into marble.

The workmanship leaves nothing to be desired. It has been carried on with a zeal and perfection of execution equal to those shown in days of old. It is like that of the most highly-finished mosaic,—not a crevice of a hair's breadth to be found between the different marbles.

The greatest, almost incredible, economy has been used in the undertaking. Both the lamented De Fabris and his successor, Del Moro, worked at the plans, kept the accounts, correspondence, did the work even of master builders, with a noble disinterestedness worthy the object they sought to accomplish.

Few workmen have been employed. The material work has been directed by an intelligent stone-cutter, one Malucetti.

The whole has been carried out by public and voluntary subscription, from that of the 200*l.* of the rich to the halfpenny of the poor. The cost of the work to now amounts to about 27,000*l.*

An animated balloting is now going on to discover public opinion.

The serious divergence of opinion may lead to an endless delay, but it is earnestly to be hoped that the work may be speedily resumed, when it is said the façade can be completed in less than a year, if funds sufficient are found.

FIRENZE.

NEW PREMISES, NEW-STREET, BISHOPSGATE-STREET.

THE building illustrated occupies the site of the old houses and has been erected for Messrs. H. W. Eaton & Sons, silk brokers, who have removed from Old Broad-street. It contains a lofty and well-lighted basement and four floors above it, with attics for housekeeper in addition. Each floor is well lighted both back and front. The ground-floor is used for offices, the first and second floors for silk sampling-rooms, the third being for the periodical silk sales. Convenient lavatories are provided for each floor. There are strong rooms in the basement and on the ground-floor. The main staircase is of teak, with handrail and balusters of walnut and pitch-pine. The floor of the basement is paved with wood-block paving. There is a lift from the basement to the street, and another delivering to each floor. The front of the building is of white Suffolk bricks with Bath stone cornices and dressings.

The warming and ventilating are effected by the Æolus Ventilating Company, of 235, High Holborn, the warming being by means of two of the company's new gas stoves, fixed in the basement, which deliver a copious supply of pure, fresh, warm air to each floor by means of shafts passing up each side of the building with valves in each room to regulate the supply, and the vitiated air is drawn away by flues in the side walls, on the top of which are powerful exhaust-ventilators, which work admirably. The "Water Spray" ventilator of the company is also fitted to be used in connexion with the stoves when the outer air is close and warm. The consumption of gas is very small, the heat regular and without any smell.

The lifts have been supplied by Messrs. Waygood & Co.; the sanitary work by Messrs. Stidder.

The contractors were Messrs. W. Cubitt & Co., and the architect, Mr. Charles Bell, Dashwood House, 9, New Broad-street.

A Marble Statue of Mr. Gladstone was unveiled at the City Liberal Club, in Walbrook, on Thursday last, the 13th inst., by Mr. B. W. Currie. The statue is by Mr. E. Onslow Ford. The granite pedestal was supplied by Messrs. Bellman & Ivey, of Wigmore-street.

DESIGN FOR A COTTAGE HOSPITAL.

THE object kept in view in this design, which received the second premium in a recent competition for a new hospital of this class at Surbiton, has been to produce a convenient plan, suitable in all respects for the object in view, and so arranged as to secure the greatest amount of comfort for the wards, and thoroughly good and economical working for the administrative part of the building.

The special points required in a small hospital of this class have been taken into account; the accident ward and operating-room (the latter lighted from above) are kept so that they can be well shut off from the rest of the building; the convalescent room is rendered cheerful and inviting by a south and west aspect and a large projecting bay; the water-closets are properly cut off by ventilating lobbies; and the plan generally is arranged so as to make the most of the spaces. On the upper floor a verandah provides means for the nurses to get change of air occasionally without leaving the upper floor of the building. The plan and design are by Mr. Loxwood King, architect.

PALACE FOR THE MAHARAJA HOLKAR OF INDERE, CENTRAL INDIA.

THIS important building is very solidly constructed of stone and marble, arranged in three colours,—the lower or basement story in dark grey; all the rusticated work in pale purple; the mouldings, &c., pure white, with delicate rose-coloured columns and pilasters; the statuary in white marble, and the roof covered with brilliantly-coloured enamelled tiles. All the external ironwork is richly gilt. The general effect will be costly and rich in the extreme. Great variety of light and shade is obtained by the numerous open arches and recesses, forming ample shelter on all sides from the sun's powerful rays. The interior of the Durbar Hall is a bold and striking design, elaborately treated, a view of which we hope to be able to give in a future number.

The work is being carried out from the designs of Mr. John Campbell, architect, of Bombay. Our illustration is from a water-colour drawing by Mr. George Nattress, of Great James-steeet, London.

THE INDIAN COURT, SOUTH KENSINGTON.

AMONGST the important additions which have been recently made to the South Kensington Museum, the great Indian Court is, perhaps, the most interesting, and is decidedly the most extensive. Owing to its great size and height it has been found possible to reconstruct within it whole fronts of houses, and large portions of buildings, so that instead of merely studying Indian architecture piece by piece, we may now gather a good idea of the general effect of the street architecture of that wonderful country. The South Kensington authorities also deserve all thanks for rescuing so many exquisite architectural works from destruction. It is a painful fact that our conquest of India, and our attempts to introduce European civilisation into that country, have resulted in the destruction of native art. Any one who will compare Indian works executed half a century back with articles being now produced, cannot help being struck by the deterioration both in design and execution.

The art now springing up in India is simply a bad imitation of European work of the worst description. That this should be so is a matter of the greatest regret, because the native workmen possess a skill in the design and execution of ornamental detail, which has probably never been surpassed in any country, or in any age. That these very workmen should be encouraged in giving up their own style of work in order to make imitations of the miserable modern European art-workmanship, itself at best an imitation, or revival, of the designs of some former age, is simply the most disastrous fact connected with the history of modern art. Here, absolutely with art-workmen equal in artistic and executive skill to those of the best period of the Middle Ages, we are forcing upon these men our own vulgarity and degradation. These may seem strong expressions, but let any one compare these native works at the South Kensington Exhibition with the best European products of our time, and we venture to think that he will come to the conclusion that, as far as ornamentation goes, we are utter savages compared with these Orientals. So far from designing their wonderful geometric patterns, we can scarcely draw them when we see them before us. Then again, look at their use of colour, which is simply perfect. Whether they use the brightest or the most subdued tones, it makes no difference, — everything is harmonious and delightful. Now all this is rapidly disappearing before the growth of "European civilisation." Our European settlers in India will have their "home comforts"; they will insist upon having "the neat stucco portico," balustrade, and pediment, of the London "jerry builder"! We have just been looking at some photographs of Calcutta, showing the "palaces" of the European "merchant princes." Is such contemptible architecture to be found anywhere else in the whole world? Here is a building with a huge pediment, constructed of rubbish covered with plaster, half of this abomination has broken away from the wall, which refuses to remain any longer in such bad company! Opposite is another "palace," with one whole pilaster, two half dittos, and the cap and base of a fourth: the putty or glue with which they were stuck to the front has, we suppose, melted in the Eastern sun! It is painful to think that the native workmen should be taught by us to build such vile rubbish, and to execute such degraded designs. And we are glad to see the South Kensington authorities bringing together, while they still exist, examples both of ancient and modern native Indian work.

Our illustration shows the fronts of two remarkable houses, dating from the seventeenth century, which were formerly at Ahmenabad, one of which was called the House of Shams-Shah-Bahadur. The whole of the ornamentation is composed of floral work, and shows strong Persian influences in the design. The splendid ceiling to the left of our drawing is a work of totally different character, the ornamentation being for the most part composed of figure subjects and grotesques. This formed a portion of the Pagoda of Cochin, which was pulled down in 1881.

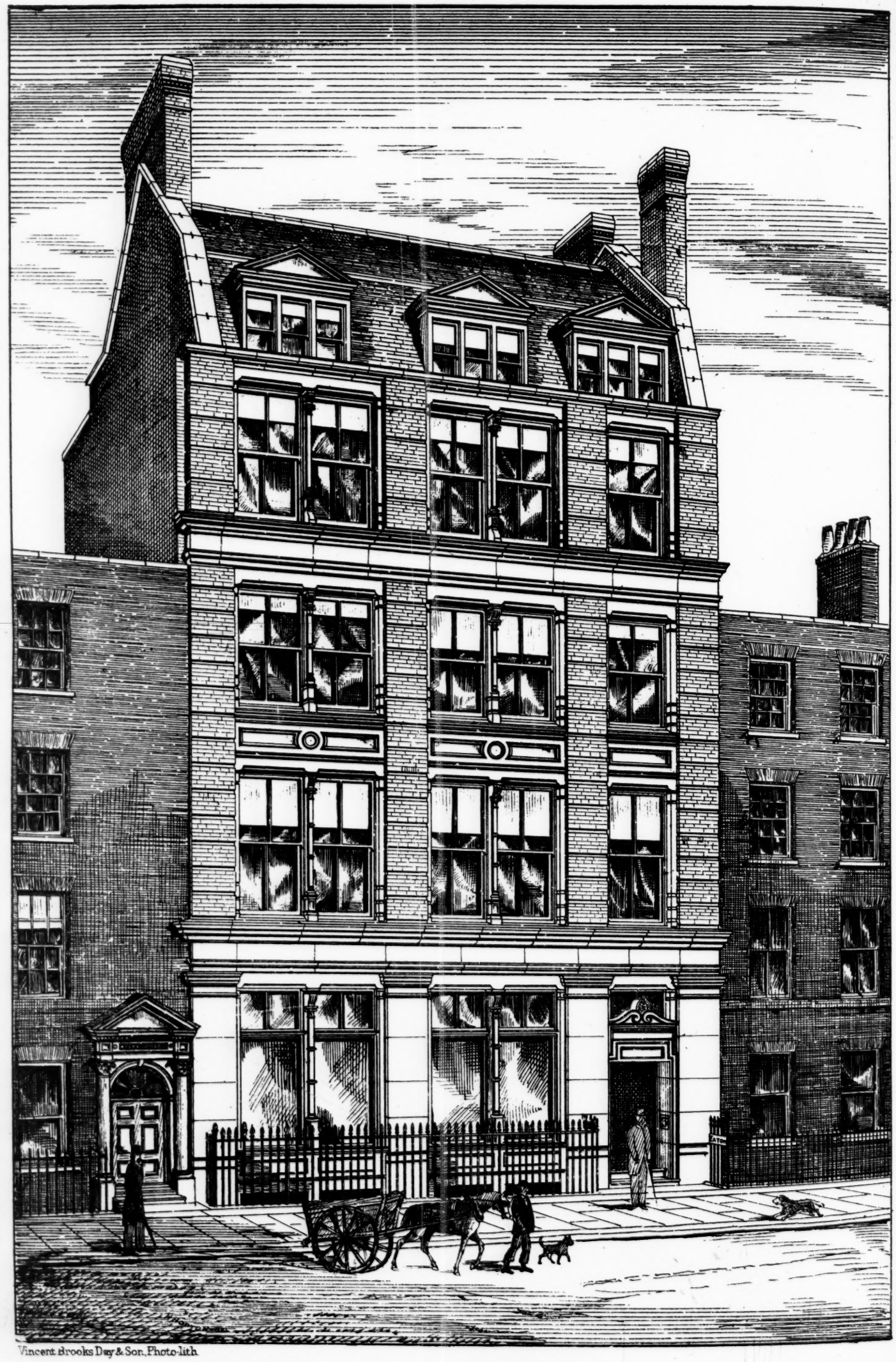
The beautiful doorway to the right comes from Amritzur, the balcony from Lahore, and the doorway and window in the corner of the room from the Punjab. These latter are all of very late date, some of them not earlier than the end of the last or commencement of the present century, and there are examples dating almost from the present time, showing that it is not too late even now to rescue this beautiful style of art from entirely disappearing before the march of European "civilisation."

H. W. B.

ST. BEDE'S CHURCH, LIVERPOOL.

WE illustrate, this week, a new church which is about to be built in the Hartington-road, Liverpool. The church is to consist of five wide bays and an apsidal east end for the sanctuary, the chancel floor being brought out to the first bay of the nave, to give an unbroken line to the arcades, for appearance of length, the site necessitating a rather short church. There are also aisles, two transepts, north and south porches, with a tower and spire adjoining the south transept, this being the only spot on the site where it could be placed, and the ground-floor of which is to be used as a vestry. The church is designed to hold 750 people. It is to be built of the local red stone, and the arcade pillars will be of magnesian limestone. The estimated cost is 7,500*l.* The architects are Messrs. J. E. K. Cutts & A. H. Mackmurdo.

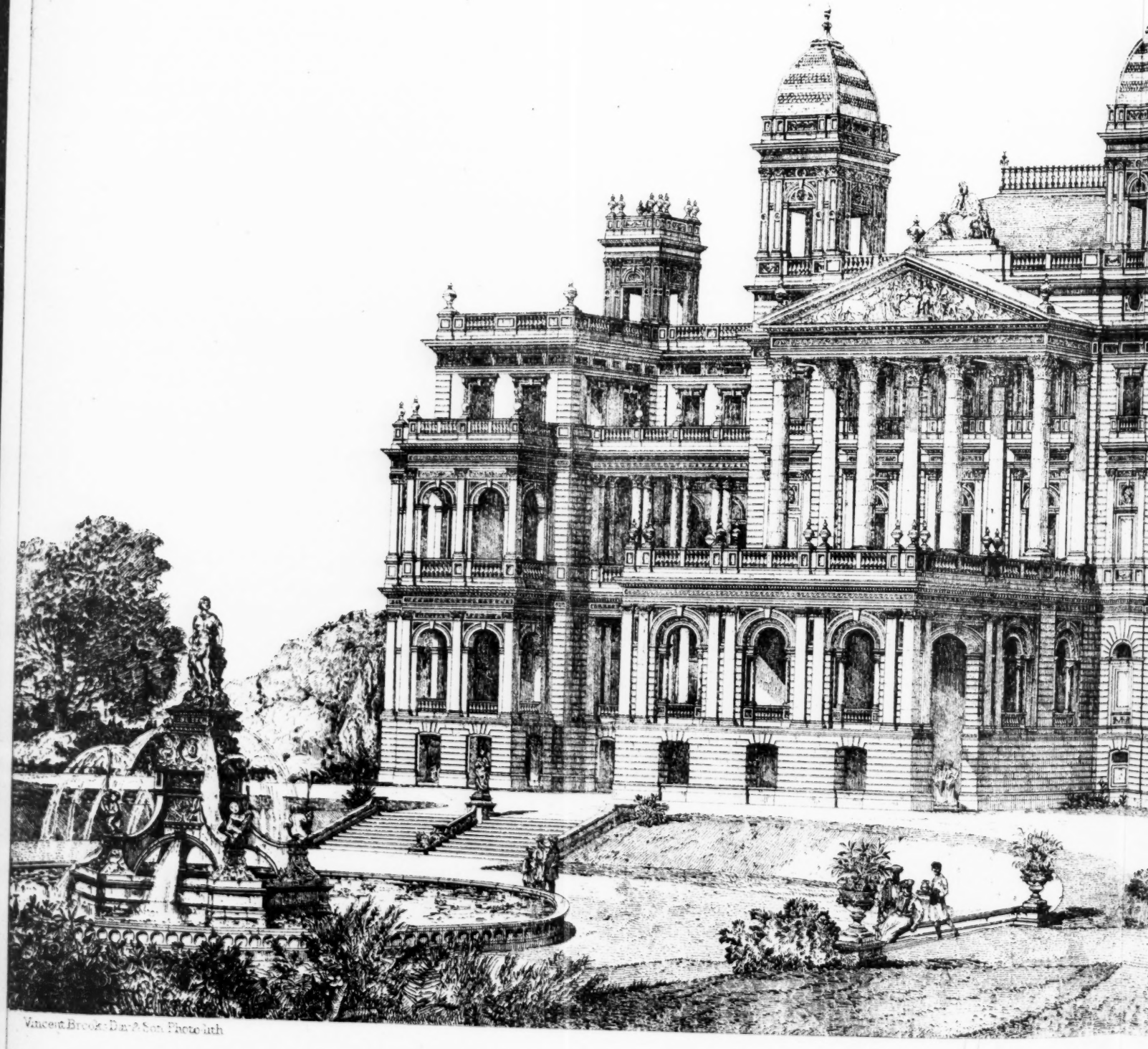
The Drainage of Kilburn.—In the Queen's Bench Division, on the 3rd inst., before Baron Pollock, the case of the Metropolitan Board of Works *v.* The Willesden Local Board, came up. It raised the question whether districts outside the Metropolitan area, as defined by the Metropolis Management Act, 1855, are entitled to discharge their sewage into the Metropolitan main drainage system, the Metropolitan Board having no power to levy a rate outside their own area. The plaintiffs asked for an injunction as regarded both the Kilburn and the Harlesden districts. His lordship granted the injunction in the Kilburn case, with costs, and a qualified injunction in the other case.



Vincent Brooks Day & Son, Photo-lith.

NEW OFFICES AND WAREHOUSE, NEW ST., BISHOPSGATE STREET WITHOUT.

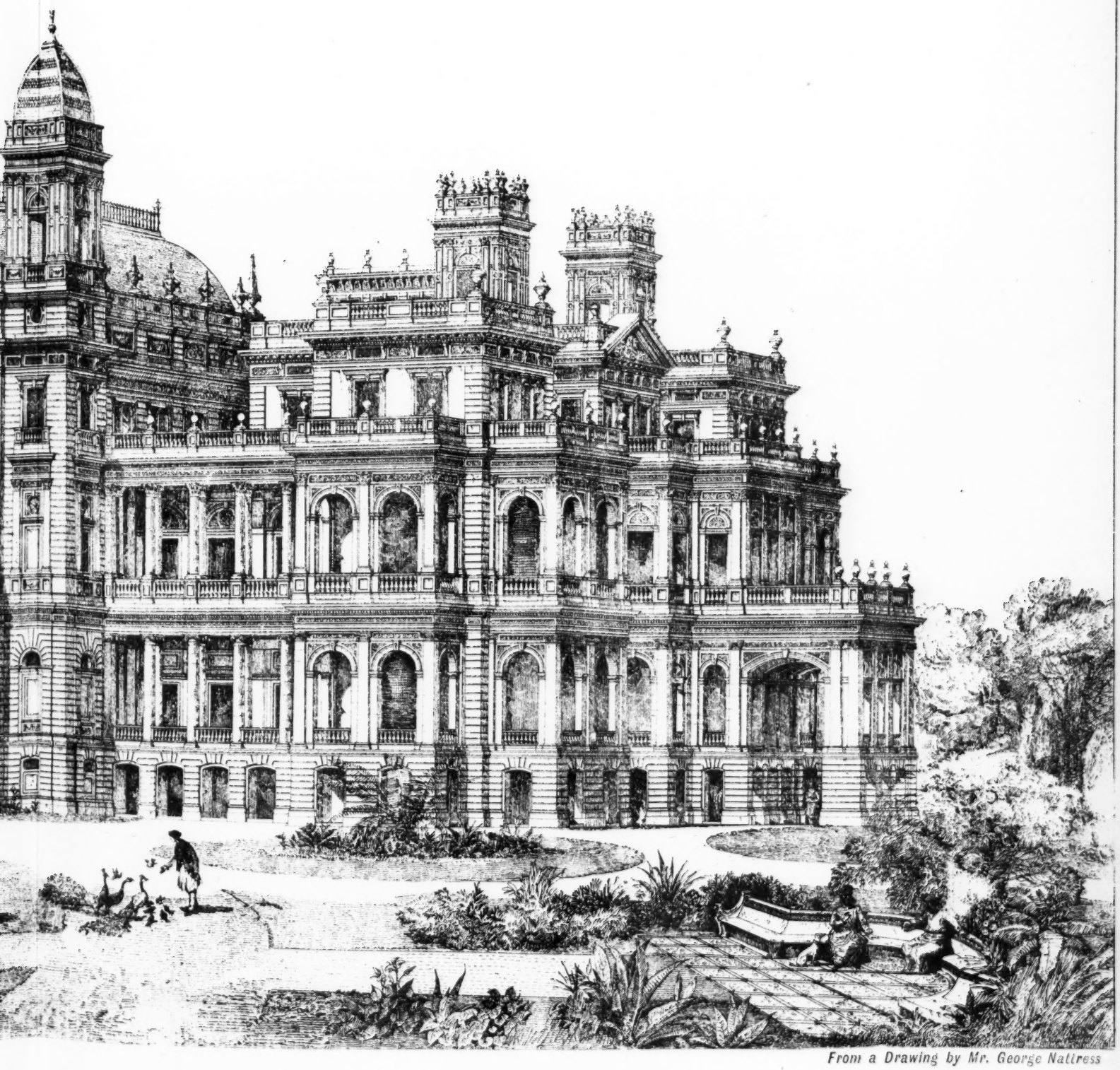
MR. CHARLES BELL, F.R.I.B.A., ARCHITECT.



Vincent Brooks Day & Son Photo-lith

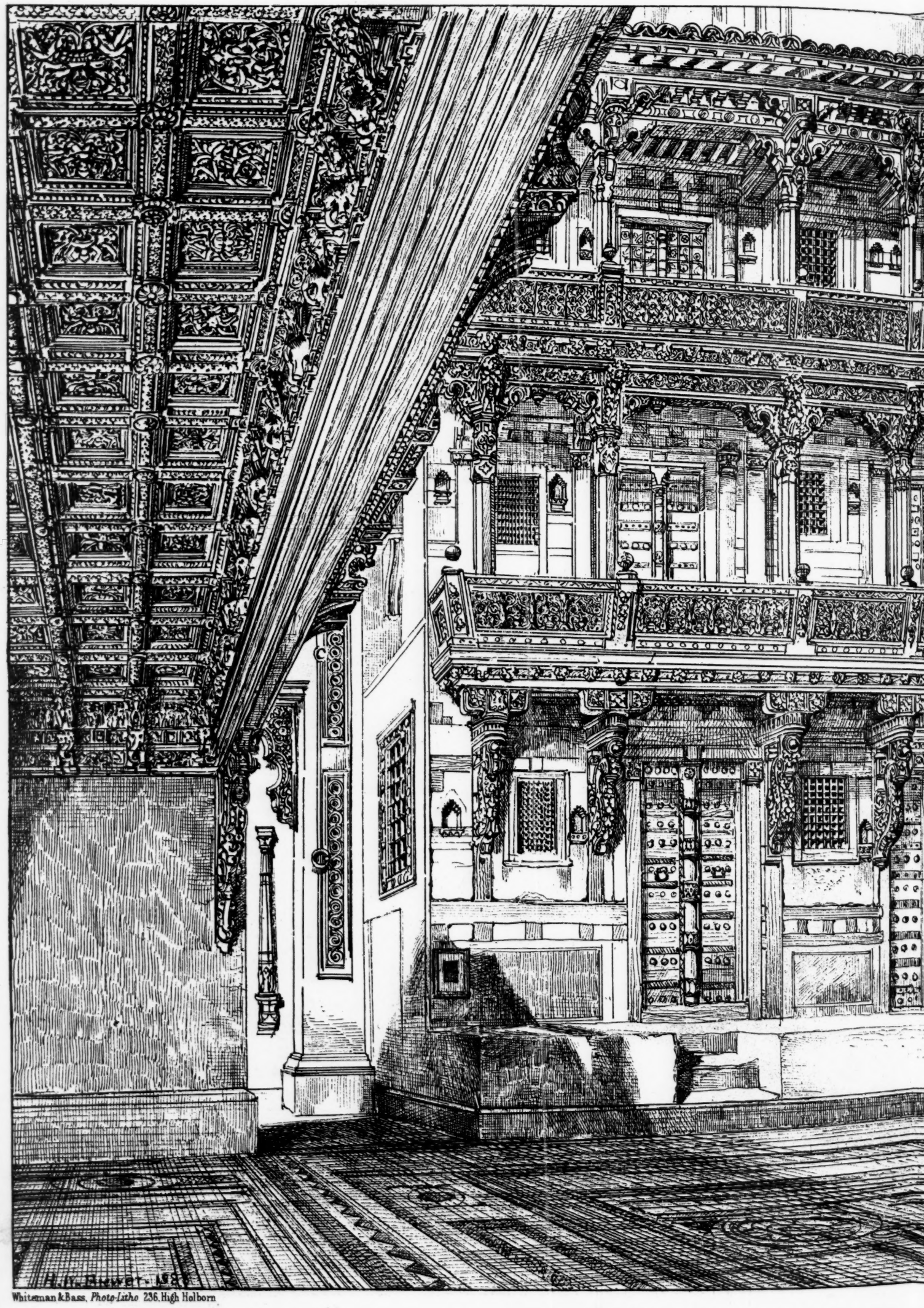
PALACE NOW BEING BUILT FOR THE MAHARAJA

From the Designs and under the Superintendence



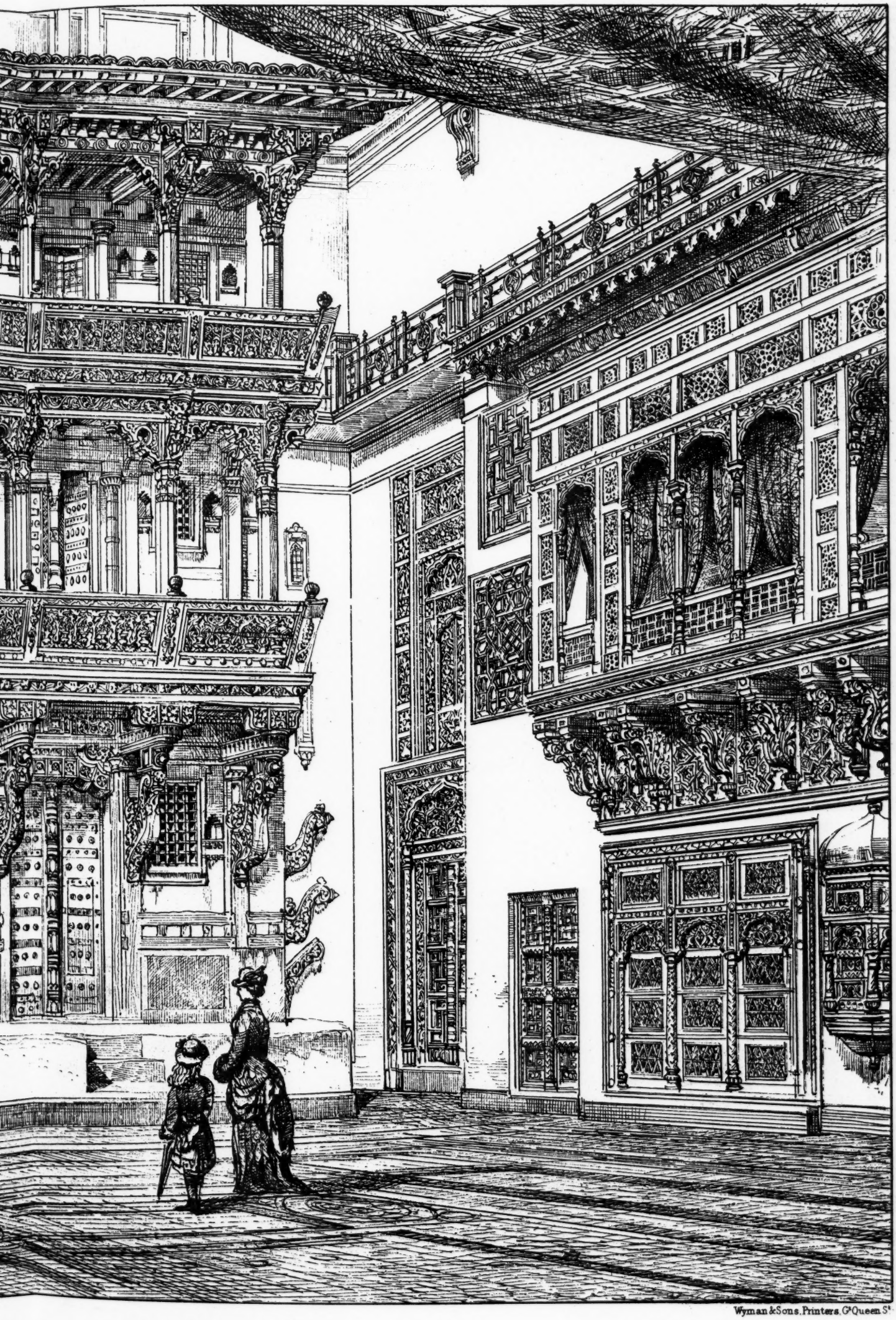
From a Drawing by Mr. George Nattress

HARAJA HOLKAR OF INDERE (CENTRAL INDIA),
intendence of Mr. John Campbell, of Bombay.



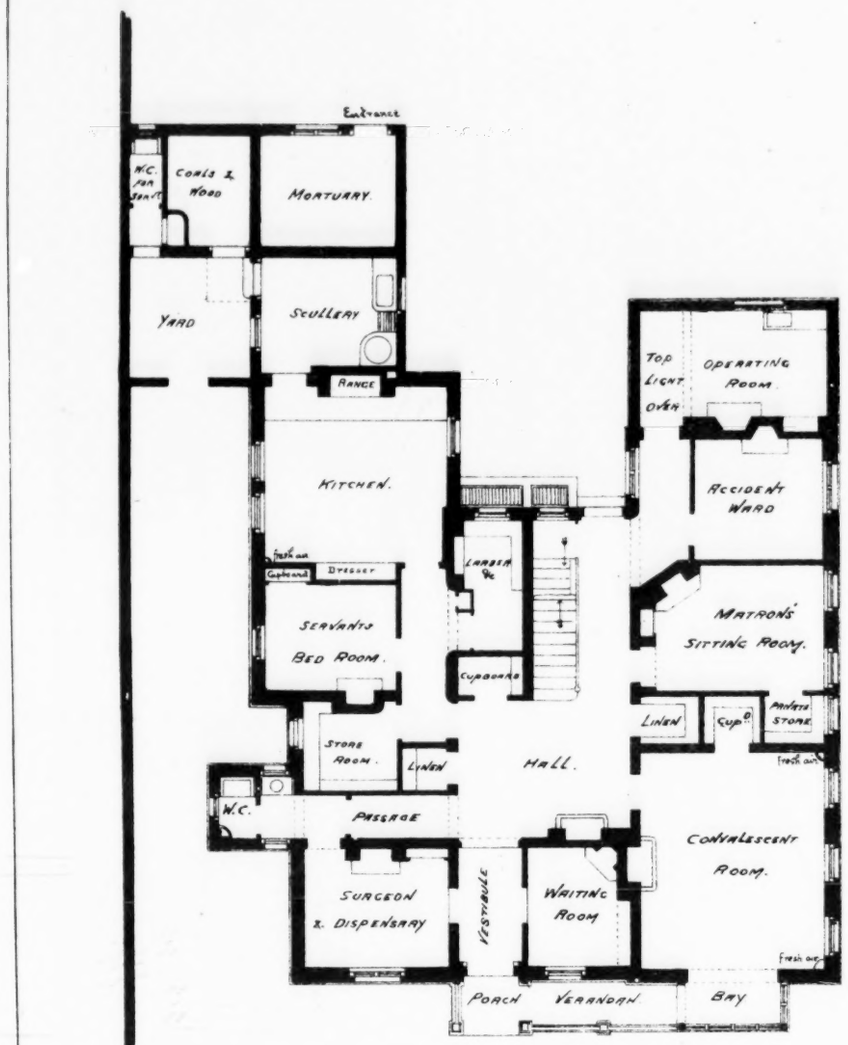
Whiteman & Bass, *Photo-Litho* 236, High Holborn

THE INDIAN COURT, SOU

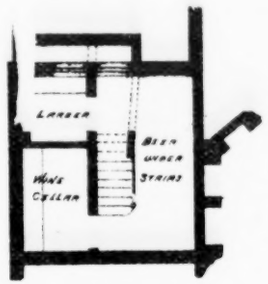


Wyman & Sons, Printers, Gt Queen St.

T, SOUTH KENSINGTON.

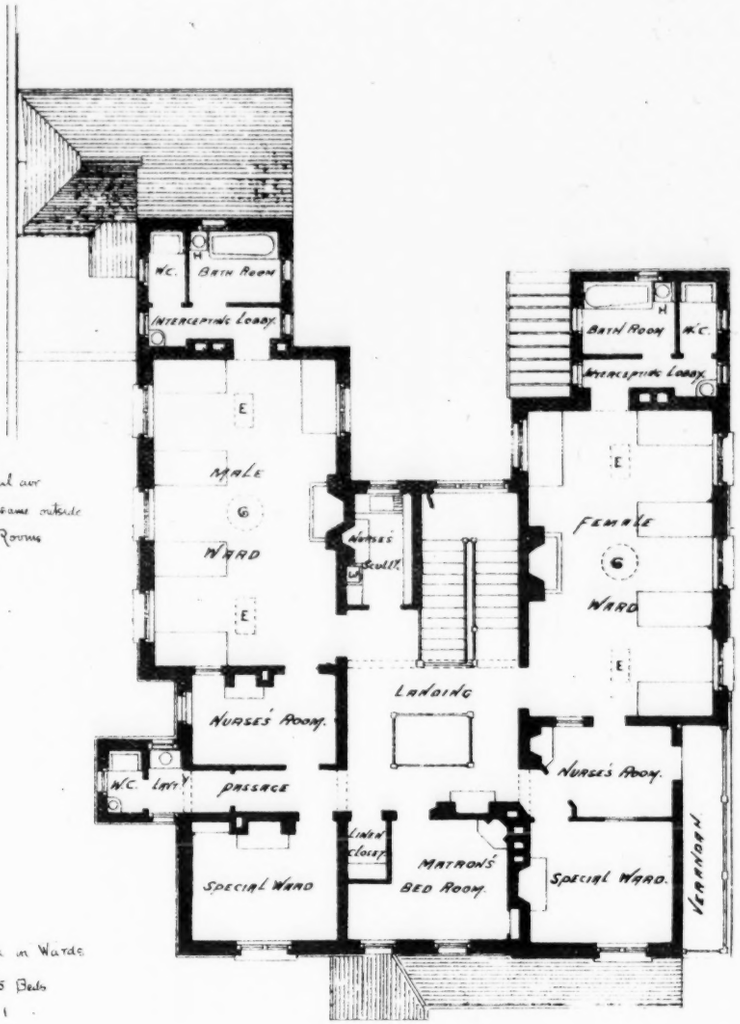


PLAN OF GROUND FLOOR.



PLAN OF CELLAR.

E Extraction flaps in ceiling for foul air
G Ventilator on Ridge to draw the same outside
H House main's screw in Bath Rooms



Summary of Accomodation in Wards

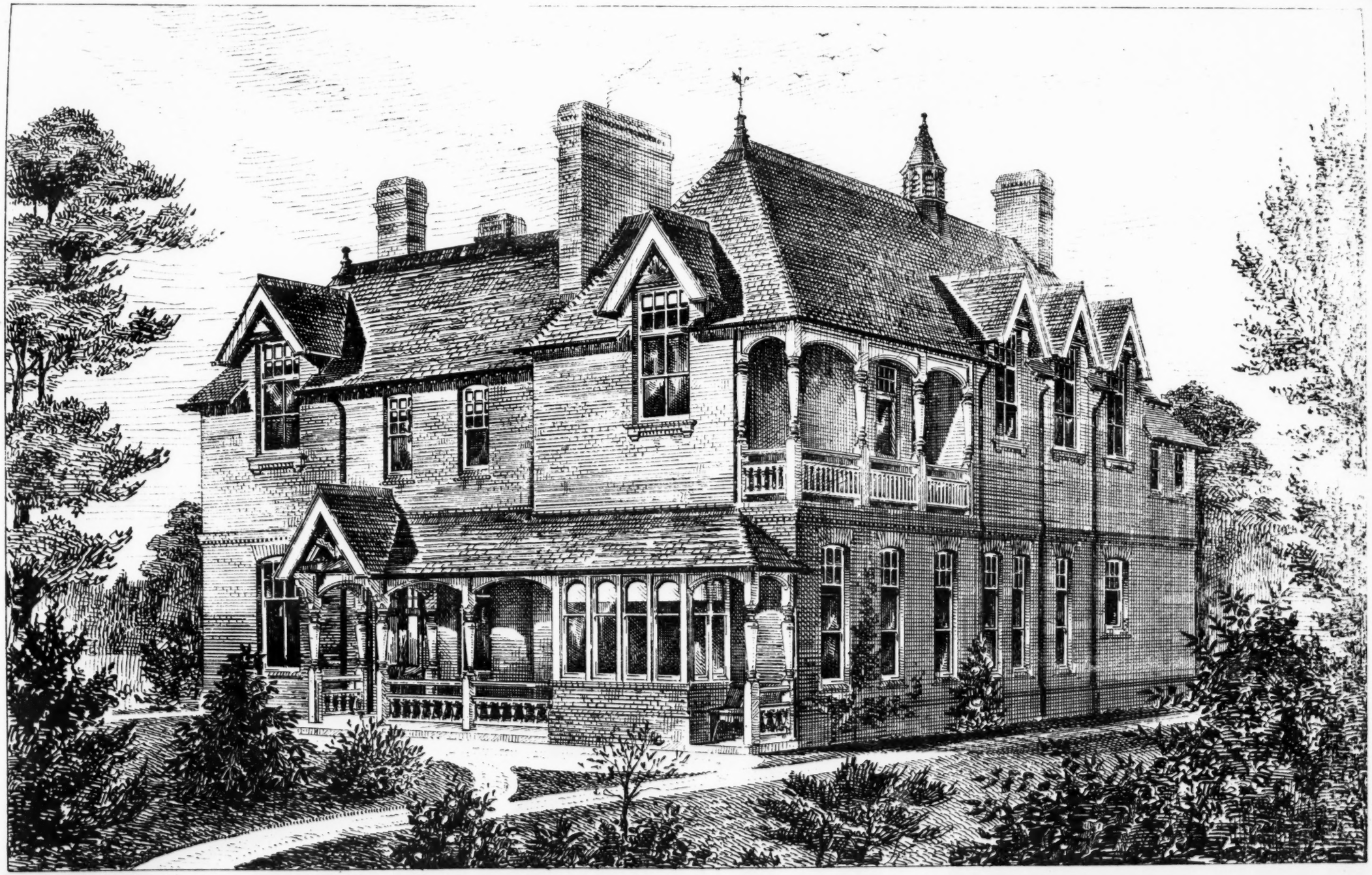
Male Side	Large Ward	5 Beds
	Special do	1 "
Female Side	Large do	5 "
	Special do	1
	Total	12 Beds exclusive of Accident Ward

PLAN OF UPPER FLOOR.

SCALE OF 0 0 10 20 30 40 50 60 70 80 90 FEET.

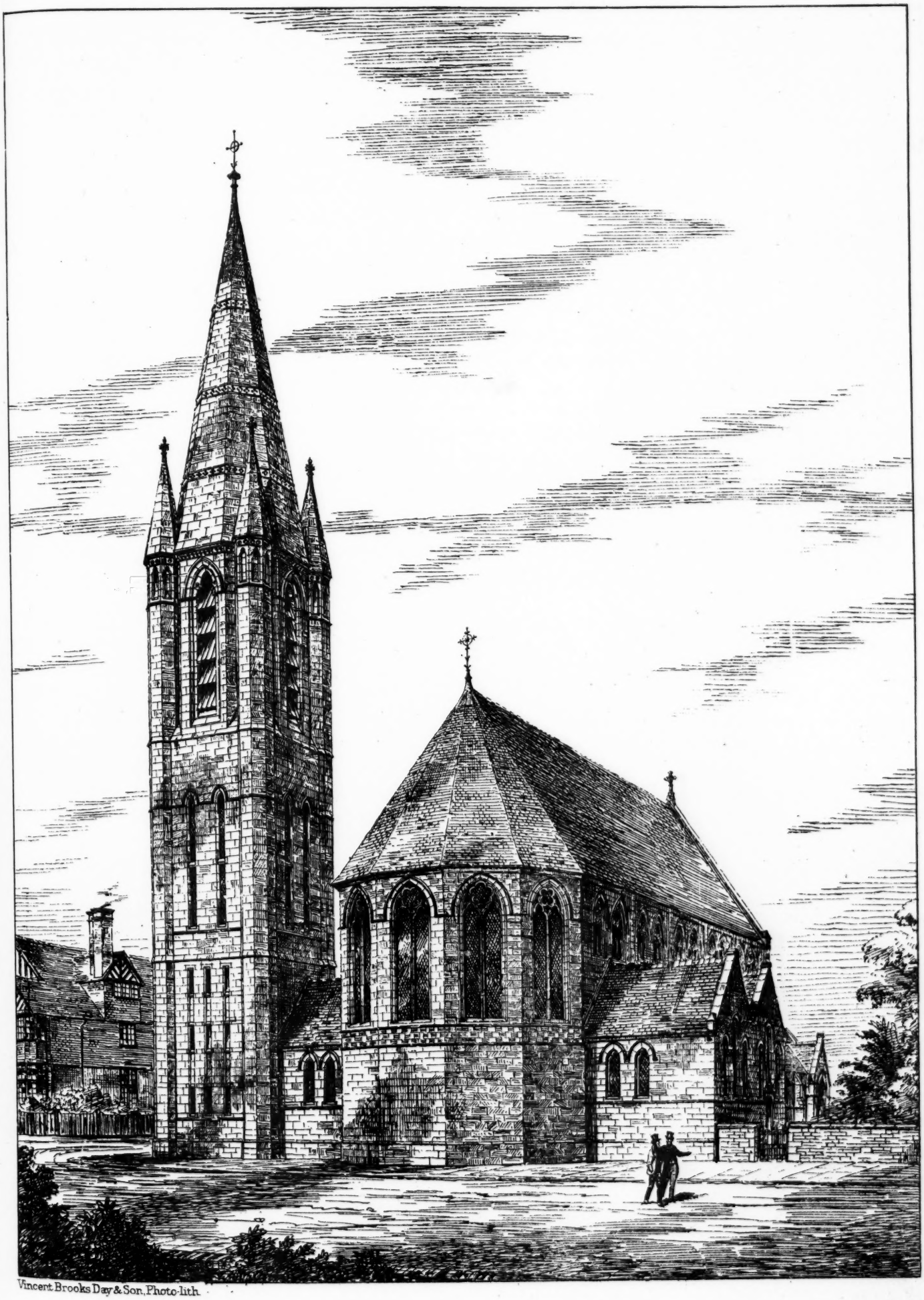
Vincent Brooks Day & Son Photo lith

SURBITON COTTAGE HOSPITAL, 2nd PREMIATED DESIGN — Mr. J. Lockwood King, Architect, A.R.I.B.A.



Vincent Brooks Day & Son. Photo. lith.

SURBITON COTTAGE HOSPITAL, 2ND PREMIATED DESIGN.—MR. J. LOXWOOD KING, ARCHITECT, A.R.I.B.A



Vincent Brooks Day & Son, Photo-lith.

ST. BEDE'S CHURCH, LIVERPOOL, N.E. VIEW.

Messrs. J. E. K. Cutts & Mackmurdo, Architects.

OPEN SPACES AND RECREATION GROUNDS.

THIS was the subject of an interesting paper, read by Mr. Alderman W. H. Bailey, of Salford, at a meeting of the Manchester Field Naturalists' Society, held in the Memorial Hall, Manchester, on Tuesday evening last. After speaking of the useful work done by this Society for many years past in promoting the study of the beautiful in Nature, further progress in which work would, he believed, greatly mitigate the growth of those terrible social evils which are created by the congested state of the dwellings of the poor, he expressed it as his conviction, from a considerable acquaintance with the condition of the working classes in Lancashire towns, that there are large numbers of highly-paid artisans who have no occasion to live in the slums unless they choose. Having shown the intimate connexion between open spaces and health, and that the unwholesomeness of crowded districts is not only a cause of degradation, physical weakness, and pauperism among the inhabitants, but a perpetual tax upon the ratepayers and a charge upon the benevolent, the lecturer referred to and quoted from a pamphlet recently published on the subject by Mr. Herbert Phillips, and described what has been done by the Salford Corporation in getting hold of some of the odd scraps and corners of land which occur along all recently-widened thoroughfares, planting them with trees and shrubs, and providing them with seats. He urged that although the building regulations of the borough gave them far better streets and wider area than they had a few years ago, it would be desirable, when they next went to Parliament, to obtain improved building regulations. He suggested that it would be a great public advantage for municipal bodies to obtain Parliamentary powers to compel landowners to devote say one acre as open area in every twenty acres they sold for building purposes. After referring to the account in last week's *Builder* of the open spaces provided by the Manchester and Salford Dwellings Company, the lecturer urged that when a builder of houses is prepared to allow more passage accommodation and more street space than he is absolutely required to do by the building regulations, the municipal authorities should have power to pave and flag, free of extra charge, all such extra space devoted to the public. In Salford this had already been done to some extent, but there was further scope for such action. In conclusion, the lecturer said he viewed with some alarm the idea that the evils of congested town dwellings must be ameliorated by Government assistance in the shape of public loans. If the Legislature stepped in at all it should be in order to invest local authorities with stronger powers and more stringent building regulations. The cure for existing evils in this respect was in the hands of the people themselves. They had demanded and obtained free libraries and reading-rooms, public baths, and other good things; let them, therefore, co-operate to make the dwellings of the poor more worthy of a Christian community and of the triumphs of local self-government.

MACHINERY AT THE SMITHFIELD CLUB SHOW.

THE display of machinery in connexion with the eighty-sixth annual Cattle Show of the Smithfield Club does not include many exhibits of special interest to the building trades. Agricultural implements and machinery are, of course, in the ascendant, but even among these it was not possible to detect many novelties. Such well-known firms as Aveling & Porter, Rochester; Barrows & Stewart, of Banbury; and Clayton & Shuttleworth, of Lincoln, have no difficulty in maintaining their repute. The same thing may be said of Messrs. Davey, Paxman, & Co., who exhibit portable, horizontal, vertical, and semi-fixed engines, of great excellence of design and finish. This firm lays itself out to give special attention to engines for electric lighting, and the engines which they supplied for this purpose to the recent Fisheries Exhibition won high encomiums from all who saw them. Mr. James Coultas, of Grantham, has on exhibition a good portable engine, exhibiting many improvements, not the least of which is the absence of all bolt-holes under the lagging. The engine is fitted with Coultas's patent chimney-elevator, a very necessary improvement, both for convenience and for safety of the workmen. Messrs. John Fowler & Co., of Leeds; Messrs. Richard Garrett & Sons, of Leiston; Messrs. R. Hornsby & Sons, of Grantham; Messrs. Marshall, Sons, & Co., of Gainsborough; Messrs. Ransomes, Head, & Jefferies, of Ipswich; and Messrs. Ruston, Proctor, & Co., Lincoln, hold their own, as usual. Messrs. E. R. & F. Turner, of Ipswich, show, among other exhibits, varieties of their excellent and compact "Gippeswyk" engines, of which we have spoken in terms of commendation on previous occasions. Mr. E. S. Hindley, of Bourton, shows some of his excellent horizontal and vertical engines; in the latter some very considerable improvements in the direction of simplicity, durability, and accessibility of parts have lately been made. Messrs. R. Waygood & Co. are exhibitors of a good horizontal expansive engine, with patent governor. Messrs. Henry Wurr & Co. show some very useful machinery for the builder's yard, and for use on jobs, including woodworking machinery, combined engines and mortar-mills, &c.

Among the miscellaneous exhibits, Mr. John Bellamy, of Byng-street, Millwall, exhibits wrought-iron tanks for agricultural and other purposes. Messrs. Burney & Co., of Millwall Docks, are also exhibitors of the same class of goods. Messrs. F. Morton & Co., of Liverpool, exhibit models of galvanised corrugated iron structures. The St. Pancras Ironwork Company show some of their excellent stable, cow-house, and piggery fittings, than which none can be better. Crosskill & Sons, of Beverley, are among the exhibitors of vans and carts. Messrs. Bradford & Co. are exhibitors of laundry machinery. Messrs. F. Rosher & Co. show stable paving, and Messrs. Fabian Bros. exhibit a new and ingenious ironing machine, admirably adapted for the use of laundries or large public institutions. The linen to be ironed is passed over a revolving cylinder, beneath the polished surface of a saddle-shaped "iron" extending the whole length of the cylinder, and to which (the "iron") a to-and-fro motion is imparted, lengthwise of the cylinder. The "iron" is hollow, and heated by steam. Mr. Hancock exhibits his "Paragon Automatic Combination Bolt and Unpickable Lock," of the merits of which we have previously spoken.

CONFERENCE ON THE DWELLINGS OF THE LONDON POOR.

THE Lord Mayor (Alderman Fowler) presided on Tuesday at a meeting which he had convened in the Egyptian Hall of the Mansion House to consider the question of the dwellings of the London poor. Among those present were the Archbishop of Canterbury, the Bishop of Bedford, Archdeacon Farrar, Mr. W. Fowler, M.P., Sir R. Carden, Mr. Alderman Cotton, Sir Edward Watkin, Lord Claud Hamilton, the Rev. W. Rogers, the Rev. S. A. Barnett, Mr. Ernest Hart, Mr. George Potter, and others interested in the question.

The Lord Mayor opened the meeting by briefly expressing his opinion that what they needed was more sympathy between the rich and the poorer classes, and paying a well-deserved tribute to the clergy who had worked among the poor in the East end, and the house-to-house work of the City Mission.

In the course of the proceedings Mr. Sawell, secretary of the City Mission, said the root of the whole question was found in the habits of the people. They might clear away the "rookeries," but it was more difficult to change the habits of the "rooks." This, he believed, would scarcely be done in a generation.

Lord Claud Hamilton, the chairman of the first established Artisans' Dwellings Company, said he believed private enterprise was the only solution of this great question; State aid should be entirely dismissed from the calculation, and they must depend upon their own exertions. He dwelt upon the fallacy of many of the proposed remedies, and especially that of emigration, which was absurd. They did not want fresh laws; all that was needed was to put the present legislation in force.

It will be observed that these conclusions are entirely in accordance with the views we have already expressed in a recent article, and in a note to a letter on the subject which we printed last week.

Resolutions were passed at the close of the meeting, somewhat lengthy in wording, but the main end of which was in the same direction, viz., that the consolidation and more vigorous enforcing of existing statutes in regard to insanitary dwellings, was the best weapon that could be used to fight against evils which are not wholly within the province either of law or philanthropy.

SCHOOLS OF ART.

Wolverhampton.—At the annual meeting of the Wolverhampton School of Art, held on the 30th ult., Sir Rupert Kettle, in the course of some remarks on the practical applications of art, remarked that he would have been much better pleased had they been able to see upon the school walls some examples of the application of art education to the productive industries of the town. The desire was that the trade of the town should be developed. Therefore it would have given him pleasure to have seen an attempt at modelling of metal-work patterns, or the drawing of designs of something made in the town. His desire was that the principle of art should be applied to some ornamental or decorative work which would be absolutely useful to the place, and he hoped that a class would shortly be formed in the school having that object in view. As an example, he instanced the great usefulness of modelling in wax for the improvement of brasswork made in the town, and hoped some attention would be given to art teaching of that character. He remarked that if among the judges at South Kensington one had been appointed to judge the merits of the rendering of surface textures, the school would have stood very much higher in the prize-list.

Newbury.—On Saturday last the prizes gained by the students in the Science and Art Schools at Newbury were distributed by Mr. Walter, M.P., who delivered an address to the students, in the course of which he commented on the entire neglect in the great public schools, till very recently, of any instruction in science or art. He considered these subjects, up to a certain point, should be part of the instruction of every boy and girl.

BUILDING PATENT RECORD.*

APPLICATIONS FOR LETTERS PATENT.

5,585. W. J. Penny, London. Window-sashes and sash-frames. Nov. 30, 1883.

5,596. G. Greig, Harvieston. Ventilating apparatus. Dec. 1, 1883.

5,621. G. W. von Nawrocki, Berlin. Laying wood pavement. (Com. by R. Albrecht, Tilsit, Germany.) Dec. 3, 1883.

5,640. H. Darby, London. Stoves for warming air for heating apartments or buildings, &c. Dec. 4, 1883.

5,650. R. Hall and C. C. Woodcock, Leicester. Wood-paving. Dec. 5, 1883.

5,659. W. P. Thompson, Liverpool. Seat-trap for wash-basins, water-closets, &c. (Com. by A. Edwards, Ashbury Park, U.S.A.) Dec. 6, 1883.

NOTICES TO PROCEED

have been given by the following applicants on the dates named:—

Dec. 4, 1883.

3,718. B. D. Healey, Brighouse. Asphalte apparatus. July 30, 1883.

3,740. T. W. Helliwell, Brighouse. Water-closets. July 31, 1883.

3,754. C. M. Tate, London. Ventilating, &c., the atmosphere of rooms, houses, and buildings. July 31, 1883.

Dec. 7, 1883.

3,760. F. J. Austin, London. Automatic flushing and antiseptic tank.

3,848. W. Clark, London. Fireplaces and fire backs. (Com. by J. H. Burnam, Fayetteville, U.S.A.) Aug. 7, 1883.

ABRIDGMENTS OF SPECIFICATIONS,

Published during the week ending December 8, 1883.

1,891. A. M. Clark, London. Appliances for preventing the passage of flames from one story to another. (Com. by J. McCarroll, New York, U.S.A.) April 13, 1883. Price 2d.

The well of the elevator lift is enclosed with fine wire gauze, provided at each floor with doors of the same. The well is also divided horizontally at each floor by trap-doors of wire gauze, which are lifted as the cage passes through them. (*Pro. Pro.*)

* Compiled by Hart & Co., Patent Agents, 186, Fleet-street.

1,894. W. Berry and P. Stuart, Edinburgh. Pavements. April 14, 1883. Price 6d.

The pavement is formed of two tiers of blocks, and in the meeting faces of these are grooves through which telegraph wires, &c., can pass.

1,897. H. J. Haddan, London. Manufacture of mortar, concrete, and artificial stones. (Com. by T. F. Leupolt, Zittau, Saxony.) April 14, 1883. Price 2d.

Portland cement, plaster of Paris, lime, salt, and soluble glass, are mixed with water in a box by blades on the axles of the wheels thereof, and then formed in a moulding chest. (*Pro. Pro.*)

1,906. J. A. Hanna and T. F. Shillington, Belfast. Stoves. April 14, 1883. Price 6d.

This is an improvement on Patent No. 2,749, of 1883, in forming a chamber below the grate, to receive the ashes which pass from the fire thereto, through an aperture in the front of the solid bottom of the grate, while a bar prevents the fuel from passing through, and in many other details not capable of being condensed.

1,926. A. M. Clark, London. Construction of walls, ceilings, floors, partitions, air-shafts, &c., of buildings, for preventing the spread of fire, and admitting light and air. (Com. by J. McCarroll, New York, U.S.A.) April 16, 1883. Price 2d.

These are constructed of two or more layers of wire gauze, kept at a little distance apart, and which may be embedded in mortar or plaster, &c., or which may be left uncovered. (*Pro. Pro.*)

1,930. J. D. Sprague, London. Hinges or movable joints. April 17, 1883. Price 2d.

These are applicable to swing windows, looking-glasses, &c. The end of the pivot is shaped like a ball, which is held in a suitable socket, and a spring clasps the ball and prevents the pivot being easily turned. (*Pro. Pro.*)

1,951. C. J. Bell Greenwich. Movement for swing looking-glasses, &c. April 17, 1883. Price 2d.

Inside a short cylinder or barrel which forms the pivot is a spring which presses against the interior periphery of the barrel, and holds it in position. (*Pro. Pro.*)

2,052. R. Hudson, Gildersome. Manufacture of metallic roofing, cisterns, boilers, wagon and barrow bodies. April 23, 1883. Price 6d.

To dispense with "dishing," the metallic sheets are furnished with angle-pieces, or are made to overlap, and are joined together by riveting or bolting, and the roofs, &c., are built up in angular sections thereof.

2,099. J. Haigh and I. Haigh, West Bromwich. Apparatus for flushing water-closets, urinals, &c. April 25, 1883. Price 8d.

The cistern is divided into two compartments. In one the discharge-pipe rises nearly to the water level, and over it is a cap, inside of which is attached to the top thereof a pipe sliding tightly on the stand-pipe, and in the upper part of the sliding pipe are apertures. The bottom of the cap is undulated, and the top is attached to a lever and is counterweighted. A valve also attached to this lever governs the passage from the other compartment in which is the ball-valve. Both compartments are filled up to the required level, and the pull depresses the cap till it touches the bottom of the cistern, and the water flows through the undulations in the bottom of the cap through the apertures in the upper part of the sliding pipe, and down through the stand-pipe, thus setting up the syphonic action that empties the cistern. At the same time the valve closes the passage between the two compartments, and no more water can enter until the pull is released, and the cap is raised, when the valve is also raised, and a fresh supply of water passes in.

DRAINAGE AND WATER SUPPLY.

Porthleven (*Cornwall*).—On the 7th inst. Mr. Smith, C.E., Local Government Board inspector, held an inquiry at Porthleven relative to a proposal by the Helston Rural Sanitary Authority to constitute portions of Sithney, Breage, and Porthleven, a special drainage district, and to borrow 4,000*l.* for works of sewerage and water supply. Mr. F. V. Hill, clerk to the Authority, having given evidence as to scarcity of water in the district during the summer months, Mr. Dennis, C.E., said he had been consulted with reference to the points under consideration. He proposed to take the water from a spring of an old mine adit below Breage Churchtown. The body of the volume was gauged in the summer months, and the minimum quantity yielded was 27,000 gallons a day. The water could be acquired from the Duke of Leeds, the owner of the land. The height of the spring was 200 ft. above the quay, and more than 100 ft. above the lowest house in Porthleven. There would be plenty of pressure. At the mouth of the adit he proposed to form a small covered reservoir to contain 40,000 gallons of water. There would be forty-two hydrants about the town, and thirty stand-pipes. The cost of this portion of the work was 2,215*l.* In reply to a ratepayer, Mr. Dennis said the water-gauges were taken this year, which was a fair average year.—Mr. W. Husband, C.E. and other gentlemen having given evidence, the inquiry was brought to a conclusion. The town crier distinguished himself (according to the report in the *Western Morning News*) by opposing the project, observing "I'm a ratepayer, and do not want any water in the place"!

Darlaston.—At the monthly meeting of the Darlaston Local Board, on the 4th inst., Mr. Pritchard, C.E., was instructed to prepare plans and specifications for sewage works. The Chairman said the sewerage of Darlaston was a very serious matter, as it would involve an expenditure of 25,000*l.* It was resolved that a provisional contract be entered into for the purchasing of land for sewage works at The Green, at a total cost of 1,291*l.* 12s. 3d., and also that the clerk give notice to the Public Works Loan Commissioners that the Board would require a loan of 21,000*l.* for sewage works and 4,000*l.* for public offices.

Hendon.—The Hendon Local Board having certain drainage works in contemplation, for which plans and specification for the first contract were prepared by their surveyor (Mr. Pollard), seem to have been so much concerned as to the wording of the specification that at a recent meeting they referred it to a committee for consideration, and at the meeting of the Board on the 1st inst. the committee reported that they had examined the document, and approved of the same, subject to the legal clauses being seen to by the Board's solicitor. But this did not seem to satisfy some members of the Board, and it was eventually resolved that each member of the Board be supplied with a copy of the specification for perusal. Mr. Hancock, one of the dissatisfied members, said he would have liked attention to have been paid in the drafting of the specification to the printed "Suggestions" of Sir Robert Rawlinson, C.B. Mr. Pollard said he knew the work referred to by Mr. Hancock. There was a copy in the office. Some of the suggestions it contained were very good. Mr. Hancock continuing, said they were following the precedents of that colossal body, — the Metropolitan Board of Works,—instead of following the instructions of the Local Government Board. At the same meeting it was resolved to open negotiations with companies who might be willing to treat the sewage.

IRON AND CONCRETE.

Sir,—Having, perhaps, tested, examined, and reported upon as many specimens of concrete as most people, I trust I may be permitted to add a few remarks to those which have already been made in your columns by Mr. Tarver, Mr. Emerson, and Mr. Thwaite. I am glad to hear that it is a material which is beginning to seriously attract the attention of architects, and that it is "the building material of the future." I do not know that I should like to go quite so far in eulogy of it myself, for the simple reason that there is concrete good and concrete bad, and a very small quantity of the latter will ruin the reputation of the good, and prevent its use for years. Given a properly-proportioned concrete, made with suitable aggregate and the best cement, and also properly gauged, I know of no building material that can equal it in strength, hardness, or durability; but it is on those four points,—proportion, aggregate, cement, and gauging,—that its value rests, and these points should therefore have the most careful attention of all those making and using concrete.

For foundations and in trenches, where the concrete is confined on all sides, a lesser quantity of cement is required than in more finished work. Ballast, by itself, would be almost as good as concrete; and, in fact, though called concrete, the very homœpathic dose of cement which is sometimes added to it,—perhaps only the shadow of a cement-sack,—reduces it to little else but ballast. Failure, however, is not likely, and if it does occur,—well, it is out of sight.

Mr. Tarver is proposing to use concrete instead of stone, and I admit that stone is the material which concrete is destined to supersede in districts where building stone is scarce, but I submit that it should be used as stone and not as iron; and I would ask Mr. Tarver if, in the first instance, he would put up a stone beam in the position shown in his sketch having 15 ft. bearing? And, secondly, if he did so what size he would make it? Then, without going into the comparative strength of different building stones and concrete, my opinion is that the concrete beam should be the same size as the stone one. If, however, he is only going to cover an iron girder with concrete, then I maintain that he is using a material for a covering which is a great deal too good, as well as being unsuited to the purpose. Plaster, or any cheap combination of lime and sand, would be equally effective in appearance, have all the fire-resisting properties, and be much lighter than concrete; but why not build his church of concrete, treating it as he would stone? He can get all the detail of ornament, and all the strength, at considerably less cost,—and his clients, the clergy, would not "have to shrink from an innovation in the architecture of their churches."

As I look upon the manner in which concrete should be used differently to your correspondents, it is not surprising that I cannot follow them in the means they suggest, of giving it tensile strength. Concrete is practically incapable of tension, and I fail to see how the introduction into it of a material which is capable of great tension can increase its strength; for it appears that the concrete would break before the iron rods could have had any strain whatever put upon them,—the combination of two such different materials in one member must result in the entire uselessness of one or the other.* If the iron has to do the work, then the concrete puts an undue strain upon it. If the concrete is to do the work, then the introduction of iron rods or any other form of iron destroys its homogeneousness and weakens it.

I cannot help thinking that Mr. Emerson's concrete vaults would be equally strong without the wire netting. To be of any use the netting must be strong enough to carry this concrete, in which case I should think the concrete was unnecessary; if such is not the case, then the concrete is weakened by the insertion of the netting.

The manufacture and use of concrete is too large a subject to deal with in an off-hand manner. It wants very careful consideration, and above all, careful supervision in manufacture; but, with proper materials and proper manipulation, I agree with Mr. Emerson that concrete is the "building material of the future."

Henry Faija.

"QUANTITIES."

Sir,—Permit me to say a word in reference to the letter by "E." in your issue of the 1st inst., and to that by J. H. Colls in the *Builder* of the 8th inst.

When builders tender in competition, no doubt *prices* are their affair, and not the architect's. But the *quantities* to which the prices are attached are surely the responsibility of the architect, who should control this part of the business as much as any other in his client's interests, and who knows, or who should know, exactly what quantity his design requires.

In the Transactions of the Royal Institute of British Architects for the Session 1880-81, pages 249 to 252, is a statement on this subject which I have never yet seen disproved. Any architect (competent for this work) who takes out, or controls the taking out, of his own quantities, knows well that tenders on his own quantities are almost always considerably lower than those founded on the quantities of an outside and independent surveyor, whose main interest is to satisfy the *builders.* Such a man has to see that there is *enough.* He is punished if there is too little. There is no one in the client's interest to see that there is not too much. There is hardly anything that affects a client's pocket so directly and so extensively as the way in which quantities are taken out, and measuring of builders' work done.

I contend that any architect who hands this work over to an independent surveyor fails to discharge one of his chief duties to his client. I maintain, also, that if clients understood the subject they would insist on this duty being discharged by the architect, or they would at least often prefer the architect who *saw to it himself,*—(*a*) that the quantities were not only enough, but not more than enough; and (*b*) that when extras and deductions are adjusted at the end, the client's rights are as much respected as the builder's.

In my experience, even the most reputable of outside surveyors have a great disposition to square up pleasantly for the builder, and are very apt to accept claims because they do not quite see how to disprove them; whereas, the right rule manifestly is to admit no claim of the righteousness of which the builder has not clear proof.

Again, builders are always stiff in not admitting deductions; and outside surveyors (seldom well acquainted with all the circumstances and bearings of the case) are usually lax in insisting on deductions and ready to receive a builder's flimsy "reasons" for not deducting.

* The theory is that the iron is put in to resist tensile strain where it may be expected, and the concrete supplies the resistance to compression.—Ed.

An architect proper is much more than a designer. He must be able to get his design duly carried into execution (often quite as difficult a matter as making the design on paper). And, thirdly, he is,—or he should be,—the custodian (so far as the building goes) of his client's purse. This he cannot be if he hands over money matters to a man whose interests are, and sympathies may most likely be, on the side of the builder. A PROVINCIAL ARCHITECT.

*** According to our correspondent's theory, the builders ought very much to prefer an "outside" surveyor, in their own interests; according to their own showing, they prefer that the architect should be responsible for the quantities. Even if "Provincial Architect" is right, therefore, his reasons would seem to be the wrong ones.

THE LAW BUSINESS OF ARCHITECTS.

SIR,—There is much in the discourse delivered by Professor Kerr to the Architectural Association contained in your issue of the 1st inst. (p. 714) that may be read with interest by all concerned in the building trades. There is undoubtedly at the present time much less honourable practice in every branch connected therewith than even twenty years ago. Every trade and profession is in a crowded state at present, hence the keen competition, and necessity often unfortunately influences principle.

I endorse the opinion expressed as to builders having themselves to blame for undertaking to supply materials of best quality. They cannot be mistaken in this matter. Most builders are practically acquainted with the quality of the various materials applicable to building purposes, and are well aware of the difference in quality and price of such materials.

Surveyors generally take great care in specifications of all materials required for carrying out buildings in accordance with drawings prepared by architects, and in due course the contractor commences his contract,—often, no doubt, after reading scarcely a line of the conditions or specifications, but beginning with reasonably good materials; the brick, timber, stone merchant, &c., supplying good materials, or such as may be considered passable at first.

The contractor selected being generally the lowest in tendering, presses on all to supply him with materials at the lowest possible prices: hence after the commencement, each delivery of materials is generally of worse quality than the former; also the quality of the labour. Often the most qualified workmen are dismissed for men at lower wages, or are urged to do more work by scamping every part possible. As the work proceeds generally all these matters progress with it. If the contractor at the commencement deal with one of the merchants supplying a reasonably good article, travellers call and urge that the firm they represent supplies as good an article at some slight reduction in price. All pressure is brought into force for economy in price of materials and labour, entirely regardless of conditions and specifications; the contractor urges on his foreman in charge, and who, of course, in turn does all he can to get over the work as cheaply as possible for his own security. But the clauses in the conditions and specifications remain the same and possess the same meaning as when the contractor signed the contract. It is a bonâ-fide agreement, and the proprietor has a legal and perfect right to what he agrees to pay for, and if contractors were more frequently compelled to adhere to the clauses in agreements on building contracts, there would not be the inferior work now visible and daily increasing in all parts of the country.

The vast difference in prices of tenders should indicate to proprietors what they may reasonably expect, generally, from the competitor offering to do work often at one-third less than the highest tender. R. G.

THE "PARSON'S UMBRELLA."

SIR,—In your notice of the Rev. Canon Blunt's interesting records of the Church of Chester-le-Street (p. 706) you mention the "Parson's Umbrella." May I suggest that this article was for the protection of the clergyman in stormy weather when conducting funerals? I remember seeing such an umbrella in the vestry of an old church in Lancashire, which was quite a curiosity in its way. The stick was a pole, and the framework all of wood; the covering, some kind of oilcloth,—in fact, a sort of portable tent. And I was told it was, or had been, used in the way I have suggested.

G. W.

ROMAN REMAINS AT FRILFORD, ABINGDON.

SIR,—The account of the excavation which appeared in the *Times* and other papers was entirely unauthorised on the part of all those connected with it, and is calculated to give a very exaggerated impression of the importance of the discovery. The actual circumstances are as follow:—Mr. Aldworth, the owner of the property on which the remains are situated, has for some years noticed the abundance of Roman fragments on and about the spot. Taken in connexion with the previous discovery at Frilford of a Romano-British and Saxon cemetery, excavated and described by the late Dr. Rolleston, Mr. Aldworth rightly regards the occurrence of Roman coins and pottery on this site as indicating the neighbourhood of a Roman villa.

At Mr. Aldworth's request, Professor Moseley and myself in his company went over to examine the ground, and we were so satisfied with the result of a preliminary dig that we at once decided to undertake a more extensive excavation, in conducting which we had the ready help of the owner of the soil and the friendly co-operation of Dr. E. B. Tylor.

The result has been to lay bare one complete and one fragmentary ground-plan of a Roman building. The foundations of the first form a small parallelogram, with a somewhat projecting hypocaust chamber in the south-eastern corner, and many small rooms. We discovered a few fragments of Samian ware, but the traces of tesselated pavement and wall-painting left do not betray any great amount of luxury on the part of the Roman possessor. The ground-plan of the second building has been too imperfectly preserved to afford any certain clue to its shape, but the presence of a longish drain or conduit favours the conclusion that one part of it was devoted to a bath-chamber.

As we have not altogether completed our observations, it would be premature on my part to give you a more detailed account. When, however, our report is finished, I shall be very happy to send you a plan of the villa and full details.

In conclusion, I can only say that should the circumstances of the present discovery be of interest to any of your readers, you are quite at liberty to publish this letter.

ARTHUR J. EVANS.

Oxford, Dec. 8, 1883.

DILAPIDATIONS.

GALPIN *v.* HUSSEY.

SIR,—Our attention has been drawn to a paragraph in the issue of your paper of Dec. 8, calling attention to this reference. The rather misleading report which has been sent to you would naturally lead the reader to suppose that the surveyors on the opposite sides had differed as to the money values of the work to be done. We think it right, therefore, in justice to Mr. Christopher and Mr. Edmeston, the plaintiff's surveyors, to state that, as the referee remarked, the question turned almost entirely upon the legal interpretation of a rather peculiar covenant, a question upon which the counsel engaged had given differing opinions, and upon which we are about to obtain a higher judicial decision.

It was admitted that, presuming that plaintiff was entitled under the covenant to claim that the whole work should be done, the value set upon it by his surveyors was not an excessive one.

LEONARD & LEONARD.

*** We have received letters to the same effect from Mr. Edmeston and Mr. Christopher.

The Society of Engineers.—The twenty-ninth annual general meeting of the members of the Society of Engineers was held on Monday evening last, the 10th inst., in the reading-room of the Society, Victoria-street, Westminster. The chair was occupied by Mr. Jabez Church, M. Inst. C.E., F.G.S., president. The following gentlemen were balloted for and duly elected as the council and officers for the ensuing year, viz.:—As president, Mr. Arthur Rigg; as vice-presidents, Mr. F. E. Duckham, Mr. Charles Gandon, and Mr. Perry F. Nursey; as ordinary members of council, Mr. Robert Berridge, Mr. T. H. Hovenden, Mr. A. F. Phillips, Mr. Henry Robinson, Mr. W. Schönheyder, Mr. John Waddington, Mr. A. T. Walmisley, and Mr. N. Ogle Tarbotton, the last-named gentleman being a new member of the council; as honorary secretary and treasurer, Mr. Alfred Williams; and as auditor, Mr. Alfred Lass.

ILLOGICAL SANITATION.

SIR,—The recommendation by Dr. Charles Kelly to ventilate the street sewers up the water-closet soil-pipes of our houses, because he considered cases of enteric fever had occurred from the effluvia escaping from the sewer-gratings *in the street*, is surely a curious style of *improving* matters. It looks to me like "out of the frying-pan into the fire."

Seeing, as per p. 751, he referred to special ventilating-shafts up the sides of houses for the sewers, it would have been far more sensible to have recommended that the putting up of such should be compulsory than, as he does, to advocate the disuse of disconnecting-traps and the letting on of the sewer-gases with their concomitants to the people's soil-pipes and into their houses!

Another inconsistency in Dr. Kelly's remarks is his advocating the discharge of sinks and baths above ground, the water to run by an open-air channel into a trap at some distance so as to prevent all possible chance of sewer-air entering by the waste-pipes, and then actually forcing the soil-pipes with their branches inside of the houses to be full of it!

His ideas are absurd, and I was glad to see that Mr. Mark H. Judge had spoken out in condemnation of them. Had he or some other person not done so, the ghost of Parkes might have blown the Museum up. W. P. BUCHAN.

SEWERS AND HOUSE DRAINS.

SIR,—In your report of the proceedings at the Parkes Museum of Hygiene on the 29th ult., I am stated to have said that "disconnexion of the sewers and house drains was imperatively necessary so long as sewers were imperfectly constructed and inadequately ventilated."

This does not quite convey the meaning of my remarks, as it implies that, in cases where the sewers are properly constructed and ventilated, I was of opinion that disconnexion would be unnecessary; whereas I said that in all cases every house should be disconnected from the public sewer, and that the owner or occupier should be held responsible for the ventilation of his own drains and the sanitary condition of his own dwelling.

In my opinion, the public sewers should be thoroughly ventilated by the public authority, and the ventilators as well as the sewers should always be under public control, which could never be the case where Dr. Kelly's suggestion, that private house-drains and soil-pipes should be used as ventilators for the public sewers, might be adopted.

In case of an epidemic of typhoid fever, for instance, the only protection against the disease germs entering every house in the district having a water-closet inside the house, would be an absolutely perfect trap and sound soil-pipe and drain.

MARK H. JUDGE.

LIABILITY FOR DAMAGE CAUSED BY HOARDINGS.

WILSON *v.* CLARKE.

THIS case, heard in the Clerkenwell County Court on the 3rd inst., was one of some importance to builders and others as regards the erection of street hoardings.

The plaintiff was a cab proprietor, and the defendant a builder. The claim was for 7*l.* 3s. 6d., damage done to a Hansom cab, and loss sustained through coming into collision with a hoarding in Chancery-lane. The hoarding was in front of some buildings which the defendant was erecting, and between it and the road were placed some balks of wood to protect foot passengers from the vehicular traffic. It appeared that on the 13th of August a man in the plaintiff's employ was driving his horse and Hansom cab from Fleet-street towards Holborn through Chancery-lane, and in passing the hoarding, there being no light, the cab came in contact with the balks of wood, was overturned, the lamp smashed, and other damage done, besides injuring the driver.

For the defendant it was contended that he was not the right person to be sued. By the Paving Act, 57 Geo. III., cap. 29, sec. 15, it was enacted "that no person or persons whosoever should erect, set up, or build, in any public place within the jurisdiction thereof, or erect any posts, bars, rails, or any enclosure for any purpose, without having a licence and sanction of the surveyor of such district." That licence was taken out by Messrs. Willing & Co., for posting their advertisements on the hoarding in question.

The Judge (Mr. Eddis, Q.C.) held the defendant's view of the case to be the correct one, and a verdict was given for the defendant, with costs.

Royal Courts of Justice Clock and Bells. We understand that the clock and bells (furnished by Messrs. Gillet & Co.) are now completed, and that the clock will be formally started by Messrs. Blomfield & Street, the architects to the building, at 11·30 for noon on Tuesday next, the 18th inst.

PROVINCIAL NEWS.

Longton (*Staffordshire*).—On the 5th inst. Major Tulloch, R.E., an inspector of the Local Government Board, held an inquiry at the Court House, Longton, into an application which had been made to the Board by the Town Council to borrow a sum of 20,000*l.* for the extension of the Gasworks and 2,500*l.* for the completion of the baths. The Town Clerk explained that the producing capacity of the present Gasworks had now become insufficient in consequence of the increased consumption and the growing requirements for the supply of gas. There was now only sufficient storage for sixteen hours' consumption, and if anything unforeseen should occur so that an increased consumption was demanded, they would be quite unable to provide for it. The Council therefore considered it absolutely necessary to extend the works. In reply to the Inspector, it was stated that the works were very profitable, and that last year they earned a net profit of 3,920*l.* for the borough after repaying the principal and interest. There being no opposition on the part of the ratepayers, the Inspector passed on to the subject of the loan of 2,500*l.* for the baths. Councillor Farmer submitted a statement showing that there was still due on the original contracts and for extras a sum of 1,734*l.*, the balance being intended to be used in improving the baths in various particulars, and for increasing the heating powers so as to supply the demand for warm baths. In answer to the Inspector, the ex-Mayor said that on the average the baths had brought in within about 50*l.* per annum of the working expenses. Major Tulloch: That is very good; if they continue to do that, you may congratulate yourselves. He added that he did not know of any town where the receipts from baths covered the maintenance, but the small amount which was required from the rates conferred a great boon on the inhabitants.

Slaithwaite (*Yorks.*).—On the 8th inst. the corner-stone of a new Liberal Club-house here was laid by Mrs. H. F. Beaumont. The new building will comprise large billiard, reading, and smoke rooms, committee and secretary's rooms, and a lecture or concert room capable of seating 700 or 800 persons. The cost of the land has been 120*l.*, the contracts amounting to 1,650*l.*, and the cost of warming apparatus, &c., 150*l.*, making a total of 1,920*l.* Mr. Thomas Henry Haigh is the architect.

South Shields.—The Corporation of South Shields have just completed an improvement at the Mill-dam, by building a wall across the dam and filling it up with the excavations taken from the Commercial-road improvement. A large open space has thus been formed. The large open space has been block-paved, care being taken by the Borough Engineer to considerably improve the levels, thereby making not only the approach to the quay, but also to the Holborns and Commercial-road, very much easier for vehicular traffic. The contractors for the walls, filling up of the dam, and erecting the new conveniences, &c., were Messrs. Todd & Marshall; for the paving, Messrs. Wilson & Walton; and for the flagging, Mr. Henry Gillespie, all of whom have executed the work in a very satisfactory manner, from plans prepared by Mr. Matthew Hall, the Borough Engineer, under whose supervision the various works have been carried out. The Commercial-road improvement is probably one of the best street improvements effected by the Corporation during the last ten years. Commercial-road, from the Mill-dam to Cone-street, was a dirty, narrow road, and very steep, so hilly indeed, as to be shunned, not only by the owners of vehicles, but by pedestrians, the result being that most of the traffic to Tyne Dock, &c., went round by Green-street and Laygate-lane. To remedy this state of things, the Corporation decided to go in for an extensive improvement, and bought a slice of land and houses on the east side from the North-Eastern Railway Company, two houses on the west side, and also a piece of land forming the hill-side at the foot of the road. The houses, &c., were pulled down, and the new retaining-walls on either side of the road have been built with cement concrete. The walls being built, the excavations were proceeded with, and 12 ft. in depth was taken from the crown of the old road, the excavated material being used for the filling in of the Mill-dam. By lowering the road, as described, the gradient has been improved from 1 in 8 and 1 in 12, as before, to 1 in 20 and 1 in 60 as now, and it has been widened an average width throughout of about 15 ft. The contractors for this work also are Messrs. Todd & Marshall, the work being done under the direction of Mr. Hall. Both the Mill-dam and Commercial-road improvements secured the sanction of the Local Government Board, who authorised the Corporation to borrow 5,600*l.* for their execution, but the *Shields Gazette* understands that the works have been done for considerably less.

Mansfield (*Notts*).—A rearing supper in connexion with the extensive alterations and additions to the Mansfield Union Workhouse was held on the 7th inst. at the Green Dragon Hotel, Mansfield, when about sixty workmen and friends sat down to an excellent repast. The new buildings, which consist of a new infirmary, to accommodate about eighty-five patients, laundry and washhouse, workshops for painters, tailors, joiners, and smiths; male receiving wards, enlargement of dining-hall, bath-rooms, lavatories, and water-closet blocks, new water supply (hot and cold), now cooking apparatus, &c., are being carried out from the plans and under the superintendence of Mr. R. Frank Vallance, architect, Mansfield and Nottingham, by Mr. John Greenwood, contractor, of Mansfield. Mr. J. Martin is the general foreman, and Mr. J. W. Start the clerk of works. The engineers' work has been entrusted to Messrs. Benham & Sons, of London; and the sanitary arrangements have been carried out by Messrs. Doulton & Co., of Lambeth. Messrs. Longden & Co., of Sheffield, have supplied the cooking apparatus.

CHURCH-BUILDING NEWS.

Aberdeen.—St. John's Episcopal Church, Aberdeen, has recently had added to its interior fittings a reredos. The east window is so low that little scope for the treatment of the reredos was given to the architects, Messrs. Pirie & Clyne. On each side of the tabernacle is an arcade of three bays,—of Early English character. The columns supporting the arches are of beautifully variegated and polished Devonshire marbles, and are surmounted respectively by carved capitals of conventionalised foliage. Within and between the arcades are recesses for vases and flowers, &c.; and above are bosses of polished marbles. The structure generally is of grained Caen stone. The tabernacle is of finely-wrought and polished brass, the central part of the door being ornamented by a large sunflower-like enrichment. This reredos, which is the work of Mr. Harry Hems, Exeter, is mainly the gift of a lady.

Cawsand.—On the 30th ult. the new chancel of St. Andrew's Church, Cawsand, was opened. The work has been carried out by Mr. W. B. Carne, builder, of Kingsand.

Micheldever.—The parish church of Micheldever, Hants, which contains sculptured memorials to the Barings by Flaxman and Boehm, has just received an addition to its chancel in the form of a handsome reredos and side wings composed solely of polished alabaster and marbles. The central part consists of a succession of five recessed panels standing upon a moulded and massive super-altar or re-table of polished Purbeck marble. Each panel is separated by columns of green Pyrenees marble surmounted by carved capitals. The arches are ogee in outline, cinque-foiled on their lower side, and ornamented by crockets above, terminating in four instances by a foliated finial. The central apse, however, is carried up to a greater altitude, and finished with a cross. The label moulds of each arch spring from representative heads of kings, bishops, priests, virgins, and martyrs, and between each is a bold and traceried buttress, which, rising above the main cornice, terminates with a carved pinnacle. The whole of this work is in beautifully-veined and polished English alabaster from the Derbyshire quarries at Chellaston. The *abaci* of the various capitals are in polished Purbeck marble, affording a delicate contrast of colour and of material. The cornice is embattled, whilst the spandrels within and behind the arches are filled in by tracery work. The side wings are carried out on both sides as far as the north and south walls respectively. Starting from the ground the alabaster bases carry fine columns of polished Ipplepen (Devonshire) marble, each side or wing being divided into three compartments. Above the ogee heads (each divided into five openings by cusps) is much elaborate tracery work, surmounted by a boldly-moulded cornice. The wings, like the reredos proper, are constructed entirely of polished alabaster. It is designed to place mosaics in the recessed panels. This rich example of ecclesiastical art, which is stated to be the gift of one of the Earl of Northbrook's family, has been designed by Messrs. Colson & Son, architects, Winchester, and from their drawings the work has been carried out and placed *in situ* by Mr. Harry Hems, of Exeter.

Horsforth.—On Saturday last the Rev. Dr. Hellmuth. Coadjutor-Bishop of Ripon, consecrated the new parish church of Horsforth, near Leeds. The new church is Early Pointed in style, and has been erected from the plans of Mr. J. L. Pearson, R.A. The edifice is 137 ft. long from east to west, and 67 ft. from north to south. It is built entirely of Horsforth stone, and the walls are in broken courses. The tower, taken up to an altitude of 90 ft., is temporarily roofed, the intention being to surmount it with a pyramidal spire when funds permit. The addition of porches is dependent upon a like condition. The nave arcades are in five bays. A memorial window has been presented by Mr. G. Shearer, of Leeds. It is by Messrs. Powell Brothers, and represents Christ commissioning Peter to feed His sheep; and the Saviour with James and John delivering to Peter the keys of the kingdom of heaven. The pews are of pitch-pine, and open at each end, while the pulpit and the choir-seats are of oak. The floors are laid with White's patent wood blocks, and those of the aisles with Staffordshire glazed black and red tiles. The church is warmed by means of hot water, an Excelsior boiler being used for the purpose. The principal contractors were Messrs. Whittaker Bros., Horsforth; Bentley & Burn, Leeds; J. & W. Beanland, Bradford; Booth & Hepworth, Otley; and J. Hall Thorp, Leeds. Accommodation has been provided for 890 persons, the outlay so far being 12,300*l.*

Books.

The Renaissance and Italian Styles of Architecture in Great Britain; their Introduction and Development shown by a Series of Dated Examples, together with Others exhibiting the contemporaneous Employment of Mediæval Architecture, &c. By Wyatt Papworth, F.R.I.B.A. London: Batsford. 1883.

This is one of those useful books, in regard to which it may be said that "virtue must be its own reward," too often at least; one of those which are not showy and do not attract general readers, but which have a real and sterling value for the architectural student, and represent solid and painstaking work. The series of examples was commenced, Mr. Papworth says in his preface many years since, having been added to from time to time as the notes were obtained in the course of consulting various publications for other purposes. The book,—a thin octavo in paper cover,—is simply a list of buildings of the class alluded to, from 1450 to 1700; nothing could look more unpretending, many readers might say nothing more dry; but to those who can read between the lines it is full of interest and suggestion even to look through, and to all who are systematically studying the history of architecture it will prove an invaluable key to assist in tracing out the history of that branch of our own architecture with which it deals. Armed with this key, a man with some available leisure can go from place to place and trace out the successive modification of English Renaissance in buildings or minor remains of which the names, dates, and localities are here put down in chronological order. Those who have not opportunity to follow out the buildings themselves may still gain much from the references to prints and engravings of them, which are also given. It is not a kind of book that necessitates, or gives occasion for much, criticism; we believe it will be found thoroughly reliable, and will be a necessary addition to every good architectural consulting library. Mr. Papworth merits the thanks of all students of architecture for having accomplished for them a difficult and, perhaps in some senses, irksome task, which comparatively few would have the patience to work out for themselves. Apart from its practical value, to us the catalogue is a pleasant one to turn over; it suggests so much. Many of the names of the buildings mentioned are full of history, architectural and social; as we follow them down the page pleasant visions

rise before the imagination,—successions of dignified and refined structures, not very logical in their architectural ordonnance, but the outward representation of a genuine love of architectural design, and a desire to make it the expression of refined and cultivated sentiment.

The Pictorial Architecture of the British Isles. By the Rev. H. H. BISHOP, M.A. London: Published by the Society for Promoting Christian Knowledge. No date.

THE title of this book is badly worded; "pictorial" is used apparently as in "pictorial atlas" and such other titles; but "pictorial architecture" really would mean the same on "picturesque architecture." The title should have been "Pictorial Handbook of Architecture," or "Pictorical Guide to Architecture," or something of that kind. The book is, as may be supposed, one of those popular illustrated works on architecture which seldom do much good in providing for a really intelligent knowledge of the subject. In this case, however, we are glad to note a better informed and more critical style of writing than we have noticed in many popular works of the kind. The author traces the changes of architectural development in this island from the Norman period down to the present day; the City of London School, Truro Cathedral, and the Natural History Museum, forming some of the most modern illustrations. A good many useful truths about architecture are to be found scattered up and down in the book; not new, but such as we do not too often come across in a popular book by an amateur writer. For example, the eminently rational character of the Gothic style as a *stone* style, using stone in the fittest manner, both statically and economically, is well pointed out; and on other such critical questions the author seems to have got hold of his subject well, and may at least set some readers asking themselves questions. It is impossible, however, really to illustrate such points without geometric and constructive drawings of a more severe type than any which are found here. The book is obviously intended as a cheap publication, and contains a great number of engraved illustrations, which, however, are of very various, and mostly very moderate, merit. Still they are better than nothing; and it is a good deal to say of a work on architecture of this class, that it really seems to contain nothing that is false in theory, and that if it cannot offer its readers any very thorough or systematic treatment of the subject, it at least is not calculated to mislead them.

Among the illustrations of the modern period is a view of the dome and roofs of St. Paul's from the circular window of the north-west tower, showing the outer screen-wall, and the real clearstory-wall within it. This is a happy idea, and this one view may enlighten a good many people in regard to that curious sham architecture of the metropolitan cathedral, which so few people out of the ranks of architectural professors or students are aware of.

Proceedings of the Association of Municipal and Sanitary Engineers and Surveyors. Vol. ix., 1882-83. London: Spon & Co. 1883.

THIS volume, edited by Mr. Cole, the secretary of the Association, contains a great deal of very useful practical suggestion, sufficiently illustrated by diagrams. Among the papers is one on the Manchester, Bury, and Rochdale steam tramways, giving the section of the road employed, and a section and description of the special rail which has been designed for the purpose, the object being to have "the strongest and best rail it was possible to get." This is a rolled rail with deep web and broad bottom flange, fished with steel fish-plates, the groove for the wheels, in order to ensure greater accuracy, being cut after the rails have been rolled, by a separate operation. The cost, from 9*l.* to 10*l.* per ton, as against 6*l.* 10s. per ton for an ordinary rolled rail, is a serious consideration in the commercial side of the question. Mr. Read, city surveyor of Gloucester, contributes a paper on the ventilation of sewers and house drains, the main point of which is the proposed use of the road grids as inlets, outlets being carried up above the roofs of the houses. In the course of the address of the President, Mr. White, at the annual meeting at Oxford, the subject of the improvement of Magdalen Bridge is treated of, and some interesting diagrams appended, showing the construction of the bridge and the manner in which it has been dealt with, which the President hoped would eventually be regarded not as an act of Vandalism, but as a work of much public utility. "The preliminary borings having shown the presence of running sand, it was determined to pile down to the Oxford clay, which is at a depth of about 18 ft. below the surface of the meadow. . . . . The old foundations were discovered to be two thicknesses of 6 in. elm planking, laid a little below the river bed, without any bearing-piles. These foundations had" (as might have been expected) "settled so irregularly that the piers and abutments were much out of level. As the Thames Valley Drainage Commissioners intend shortly to deepen the river considerably below the old foundations, it was thought advisable to take this opportunity of securing them. Skewbacks were cut under the old work, and inverted arches of 18-inch brickwork in cement, with a versed-sine of 3 ft. 6 in., were put in from pier to pier. The river-bed between the new piers was also covered with a foot of cement concrete, in order to protect the heads of the piles, if the river-bed should be scoured out at this point after its level has been permanently lowered, and the work was finished by a sheeting of 3-inch elm piles driven across the river above and below the bridge, and tied into the brickwork and concrete." Rank Vandalism! The correct thing would have been to let the bridge fall, through the failure of its foundations. But engineers *will* do these things. The separate system of sewerage as carried out in Reading is the subject of a paper by Mr. Parry, the borough surveyor; it was followed by a very full and suggestive discussion. The volume is a very good specimen of what the reports of such an association should be, both as regards matter and form.

VARIORUM.

WE have before noticed the admirable South Kensington Freehand Drawing-books, edited by Mr. Poynter. The former sets presented subjects taken from artificial objects; a new set reaches us giving studies of flower and leaf subjects. As in the former case, the subjects are drawn in outline on one page, to be copied rather larger size on the opposite page or on the space below. Messrs. Blackie & Sons are the publishers.——*Amateur Work* (Ward, Lock, & Co., London and New York) is one of those books dear to clever boys, containing suggestions and instruction how to set about making every sort of thing they may be inclined to try their hand on; a capital boy's present-book, and with something in it for the girls' school-room too. Mr. John Hogg (London) sends us a handsome edition of the immortal *Robinson Crusoe*, with reproductions of Stothard's old illustrations, some of which are good, others not. In spite of Stothard's name, there ought to be room for a much better illustrated *Crusoe* than this; the book contains suggestive matter enough for any artist to think worth his best attention.——From Messrs. Hildesheimer we receive a sumptuous collection of Christmas and New-year cards, many of them admirable examples of chromo-lithography, and some of them going out of the usual line of Christmas cards: for instance, there are sets of very pretty etchings of English river scenery, and others with photographs of scenes. The floral coloured cards, however, impress us more for their execution than their design; they are too much mere groups of flowers, too little (indeed, almost nothing) of actual decorative design, which is far more suitable for production in "chromo" than are realistic imitations of flowers.——Messrs. A. Barnes & Co. send, in the *Decorator's Assistant*, a little book which combines practical information on the use and composition of pigments and other materials used in decoration. Mr. H. Atkinson contributes a short article on external house-painting, and Mr. J. H. Tiltman some good remarks on interior decoration, though he is a little too fond of "neutralised" colours,—the fashion of the day. By the way, we may point out that the old faith that "red, blue, and yellow are the primary colours," is not to be stated now without reservation; mixture of coloured rays gives different results from mixture of pigments. The practical part of the book is the best; in that light we believe it would be useful.——*A Guide to Window Dressing*, published at the office of the *Warehousemen and Drapers' Trade Journal* in Aldersgate-street, shows how varied are the directions in which questions of "good taste" extend themselves nowadays. This is simply a manual for arranging the articles for show in a shop-window; "to place a lot of bright goods in a given space might seem to the casual observer but a very light and insignificant task, but carefully considered as a business work, it opens a very wide field for study and improvement, and window-dressers who acquire success often disclose a natural gift in the judgment of colour and effect of no mean order." Then follow suggestions for various classes of window goods and their arrangement, of which we take note, and will examine the haberdashers' window-shows with a new and more critical interest for the future. ——"The Artist's Table of Pigments," by Mr. H. C. Standage (Wells Gardner, Darton, & Co.), gives the usual names of pigments, flanked by parallel columns giving data as to "chemical names and composition, artistic qualities, conditions of permanency, condition of non-permanency, general adulteration, tests for purity and nature of adulterants, and general remarks." This useful compendium is dedicated to Sir F. Leighton, P.R.A.——"The Patents, Designs, and Trade Marks Act, 1883" (Longman, Green, & Co.), is a reprint of the new Act, with an introduction pointing out the principal alterations effected by the measure; Mr. James Johnson, of the Inner Temple, and Mr. J. Henry Johnson, solicitor and patent-agent, are responsible for the work.——"The Bankruptcy Act, 1883" (we hope the conjunction with the Patent Act will not be thought ominous), is another handy reprint sent us by Mr. Pettitt, with comments, summary, and analytical index by Mr. A. W. Blunt, public accountant; and another book of similar scope is "An Election Manual," by Mr. J. E. Gorst, Q.C., M.P. (Chapman & Hall), containing a reprint of the "Corrupt and Illegal Practices Prevention Act, 1883," with introduction and analytical chapters pointing out the rocks ahead in electioneering business under the new law. Architects wishing to enter Parliament will find it useful; and perhaps now that a check is put on election expenditure we may hope to see some of the profession (who have less money to throw about among hungry constituencies than many other people) serving their country in the Legislature; we know one or two who would make admirable members, and could enlighten the House on some things which it, collectively, knows very little about at present.—— The "Practical Boiler-maker, Iron-ship Builder, and Mast-maker," by Mr. R. Knight, General Secretary of the Boiler-makers' and Iron Ship-builders' Society (Wyman & Sons), is a useful instruction-book or compendium on the working of plate-iron and riveting for the class of things referred to in the title, and the geometrical methods of setting out the lines of the work where necessary.——Messrs. William Rider & Son send the *Timber Trades' Journal* list of "Shipping-marks" on deals, battens, and other timber and joinery exported from various countries, with the English and French classifications, compiled from information supplied by shippers, agents, and "other authentic sources."——The Patent Victoria Stone Company send us a book about their material, giving some very high results of crushing-tests, as compared with the best natural stones; even, in fact, surpassing one of the granites in this respect.—— Messrs. Dowdeswell send us an exceedingly successful specimen of photo-gravure reproduction from a picture by Sig. Andreotti, "The Dancing-masters' Pay-day," the same size as the original picture. The general tone is rather like a good etching, though of course quite different in texture.—— *Cassell's Family Magazine* keeps up its position as a periodical of varied interest for family reading, with very good illustrations for the price of the publication.——From Sir Robert Rawlinson we have a reprint of three addresses on "The Social and National Influence of the Domiciliary Condition of the People," which ought to be read with interest at the present juncture; they are published by Messrs. P. S. King & Son.——Messrs. Letts & Co. send us an admirable collection of diaries for house, office, or pocket, suited to every kind of memoranda. ——Messrs. Hudson & Kearns's diaries and date-indicating blotting-pads are admirable; the blotting-pad especially, with its diary, memorandum of day of the month, and slip of blank paper at one side for immediate notes, is a most useful and time-saving article.

Knighton (Herefordshire).—The Knighton Board of Guardians have decided to build a new workhouse, at an estimated cost of 8,000*l.*

Miscellanea.

The College for Working Women.—The new hall which has been built in connexion with this excellent institution, at 7, Fitzroy-street, Fitzroy-square, was used for the first time on Saturday evening last, when Lady Wolseley distributed certificates and prizes to the successful students. Professor Henry Morley presided, and gave some account of the working of the College, which, he said, was one among the many fruits of the labours of Frederick Denison Maurice. It was founded to enable those who were at work during the day to spend the evening in the development of their mind by careful intellectual culture, and also by friendly social intercourse. It was not only by attendance at classes and lectures, but by human fellowship, that human minds were developed, and provision was made in both these ways for the improvement by those who attended this college. With regard to the occupation of the students, he found that those in attendance between October, 1882, and July, 1883, were thus classified,—artificial flower and toy makers and feather cleaners, 9; book-keepers, clerks, and law copyists, 32; brush-makers and chair-caners, 15 (blind women, for whom a special class was held, without fee, their earnings being very small, and for whose benefit it was hoped that by the aid of friends a library of the literature printed for the blind might be formed); bookbinders and compositors, 4; domestic servants, 26; embroiderers, lace milliners, &c., 9; fancy trades and stationers, 9; gilders, china painters, artistes, &c., 9; hospital nurses, superintendents, and housekeepers, 21; machinists, 16; milliners, needle-women, dress and mantle-makers and tailoresses, 107; shop-women, 52; teachers and pupil-teachers, 37; upholsterers and bedmakers, 16; and with no occupation (young women principally employed in domestic work at their homes), 72. Mr. J. G. Fitch spoke of the success with which the hall had been constructed, under the superintendence of Mr. E. C. Robins as architect.

British Archæological Association.—At the second meeting of the session, held on Wednesday, the 5th, the chair being occupied by Mr. Thos. Morgan, F.S.A., Mr. C. H. Compton referred to the mode of working the flint decorations of the churches of Norfolk and Suffolk, illustrating his remarks by photographs of specimens at Cromer Church, where the flint-work is laid with great regularity and with very close joints, the flint being cut square with remarkable precision. Mr. Loftus Brock, F.S.A., exhibited a silver-gilt Royalist badge, having on the obverse side the face of Charles I., and on the reverse the arms of England, &c., quarterly in engraved work. A second paper was read by Mr. Compton, on the Remains of Brambletye House. After tracing the descent of the Manor from early times the lecturer reviewed the evidence of the house having been erected by Sir Henry Compton, *temp.* James I. The evidence of the erection are much assisted by various armorial devices and initials which still remain in the ruins, and the importance of the use of such aids to history in our buildings was dwelt upon.

Surveyorship, South Shields.—At the monthly meeting of the South Shields Town Council, on the 5th inst., it was resolved, on the recommendation of the Town Improvement and Sanitary Committee, "That in consideration of the valuable services of the borough surveyor (Mr. Matthew Hall) in the construction of the tramways and the tramway stabling, as well as other important works in the borough, the Council be recommended to pay him one hundred guineas in addition to his salary." The discussion of the motion was marked by considerable acrimony of feeling, some members of the Council being of opinion that the surveyor is sufficiently well paid with a salary of 300*l.* per annum, and a commission of 2½ per cent. on paving works.

Liverpool Engineering Society.— The annual meeting of this Society was held on the 5th inst. at the Royal Institution, the President, Mr. Bramall, M.Inst. C.E., in the chair. The report of the Council, having been read, was adopted, the President congratulating the members upon the flourishing state of the society. The officers for next year were then elected, Mr. R. R. Bevis, junr., being chosen President. Mr. Bramall afterwards delivered an address on "Modern Progress in Mine Engineering."

A Christmas Present for Mr. Gladstone. A dessert service of Derby Crown china, subscribed for and specially designed and manufactured at the instigation of the Liberal working-men of Derby, is now nearly completed, and is to be presented to the Premier at Hawarden Castle on the 22nd inst. According to the Derby correspondent of the *Times*, the dessert service consists of twenty-six pieces,—viz., eighteen plates, four high comports, and the same number of lower ones. The Derby Crown Porcelain Company (Limited) have been entrusted with the execution of the order. Designed in the style of the eighteenth century (Renaissance), the shape of the dessert plates is that known as "The Devonshire," being plain circular, with a narrow, flat rim. The ground colour is rich cobalt blue, and the decoration consists of a Derbyshire scene in the centre of each plate, and these scenes are framed with broad ornamental gold bands. On the edge of each plate is a broad ornamental gold band, and between these bands are six small panels,—three oval and three oblong. The ovals are filled with a profusion of flowers upon a dark ground, while the other panels have Mr. Gladstone's initials, "W.E.G.", in slightly raised gold letters. Around the panels and along the gold bands is light ornament in gold, through which the rich blue ground is seen. On the under portions of the comports the blue ground is preserved,—it being relieved by floral medallions, and at the bottom of each piece follows an inscription, executed in red letters, "Designed and manufactured by the Derby Crown Porcelain Company (Limited) for presentation to the Right Hon. W. E. Gladstone, M.P., by the Liberal working-men of Derby, 1883." The views on the plates have been taken from the scenery in the Peak of Derbyshire.

The Board's (or the Law's?) Delay.—At the meeting of the Metropolitan Board of Works on the 7th inst., a letter was received from the Home Office conveying the concurrence of the Home Secretary in the Board's decision to take no steps in regard to the representation of the Vestry of Bermondsey as to an unhealthy area in the neighbourhood of Salisbury-place and Foxton-street. In the course of the letter Mr. Godfrey Lushington said:—

"I am directed by Secretary Sir William Vernon Harcourt to inform you that he concurs with the Board in the conclusion at which they have arrived, viz.,—that the area in question is not now within the scope of the Artisans' and Labourers' Dwellings Improvement Act, but that portions of it ought to be dealt with by other means. But I am to point out that whereas the official representation was communicated to the Board on the 15th of July, 1878,, the final decision of the Board was not made known until the 26th of October in the present year. During these five years this area has not been dealt with in any sufficient manner by any authority, and, though improved by the pulling down of a considerable number of houses, it has been allowed to remain in part, as it had been described, 'a plague-spot and fever-nest, and a disgrace to a civilised community.' This long postponement by the Metropolitan Board of Works of their decision is a matter which appears to the Secretary of State much to be regretted, because though it would not justify inaction on the part of the Vestry, it inevitably tended to weaken their sense of continuing responsibility."

It was ordered that this communication should be referred to the Works and General Purposes Committee.

New Congregational Hall, Hornsey.—This building, recently opened, has been erected at a total cost of 2,433*l.*, including 250*l.* for site, and 100*l.* for furniture. The hall accommodates 350 adults, and has seven class-rooms in communication with it; by the removal of the partitions between these class-rooms and the hall a total of 450 persons can be seated. There is an additional infants' room for 150, and a mothers'-meeting room for 100, making the total seating accommodation 700. The builders were Messrs. Mattock Bros., of Finsbury Park, and the architects are Messrs. Lander & Bedells, of John-street, Bedford-row. The building is spoken of as "a model mission-hall," and at the opening ceremony special mention was made of the architects' skill.

Sunday Opening of the Free Library at South Shields.—The South Shields Town Council has, on the motion of Mr. R. Readhead, resolved, by seventeen votes to seven, to recommend the Free Library Committee to make the necessary arrangements for opening the Reference Library and Reading-room on Sundays.

Statuary for Blackfriars Bridge.—The Bridge House Estates Committee of the Corporation have had under their consideration for some time past the question of placing statuary on the four pedestals of Blackfriars Bridge, and after a careful consideration of the subject they arrived at the conclusion that equestrian statues would be most appropriate and most in accordance with the original idea of the late Mr. Joseph Cubitt, the engineer and designer of the bridge. The committee have had some difficulty in dealing with the subject, in consequence of the size of the pedestals, and they accordingly determined, before giving a commission to any sculptor, to have a model made and placed on one of the pedestals, so that they and the public might have an opportunity of forming an opinion whether or not an equestrian statue would be appropriate. It was suggested that a plaster cast of a statue at the Crystal Palace by the French artist M. Clesinger would be suitable as regards height and size. Application was accordingly made to the Crystal Palace Company, who consented to a model of the statue being taken and placed on the north-west pedestal of the bridge. In placing this model on the bridge, the committee wish it to be understood that it is not intended to execute that particular work for the purpose of its being permanently erected on the bridge, or even to indicate the proposed treatment of any subject for a statue, but it is merely desired to give some idea of the size and general dimensions of statuary hereafter to be put on the pedestals.

Society of Antiquaries of Scotland.—The annual general meeting of this society was held on the 30th ult., in Edinburgh, Dr. Arthur Mitchell, vice-president, in the chair. The list of deceased members having been read, the society resolved to record in their minutes the great loss they had sustained in the deaths of these members, and specially by the decease of one of their secretaries, Dr. John Alexander Smith, who had been for twenty-six years secretary. The number of deaths during the year has been sixteen, and the number of new members elected forty-seven. The vacancies in the list of office-bearers were filled by the re-election of the Marquis of Lothian as president, the Earl of Rosebery as one of the vice-presidents, Mr. R. W. Cochran-Patrick, M.P., as one of the secretaries, Mr. Gilbert Goudie as treasurer, Mr. David Douglas, Mr. George Seton, Mr. G. H. Thoms, and Mr. Stair Agnew as members of committee. The annual report announced that the number of visitors to the museum for the past year had been 91,885, that during the year 523 objects of antiquity had been presented to the museum, and 5,640 articles had been added by purchase.

Cottages for the Brighton Waterworks Employes. — The Corporation of Brighton recently advertised for tenders for six cottages proposed to be erected for some of their waterworks *employés*, from plans and specifications prepared by the Borough Surveyor, Mr. P. C. Lockwood. It will be seen from the list (which we publish in another column) that the amount of the lowest tender was 2,775*l.*, or about 462*l.* per cottage. The Waterworks Committee recommended the acceptance of the lowest tender, but stated that the Borough Surveyor was instructed to specify for cottages to cost about 200*l.* apiece. It was subsequently explained that the cottages would be in such exposed situations that it was necessary that they should be more than usually substantial. An amendment referring the matter back to the Committee was carried with but one dissentient. In the meantime some of the builders who tendered are disposed to complain that their time and trouble are not duly considered by the Corporation.

Death of Mr. Richard Doyle.—Mr. Richard Doyle, the well-known artist, died suddenly on Tuesday last. He was apparently in good health on Monday evening when he dined with some friends at the Athenæum Club. Mr. Doyle was born in London in 1826, and belonged to an old Irish family. He first attracted attention as a contributor of several of the most striking of the early cartoons in *Punch*. He was for many years a constant contributor to that journal, but severed his connexion with it in 1850 under circumstances which are well known. The familiar cover of our popular contemporary was also designed by him. Mr. Doyle illustrated many well-known books, and published some sketches of English society in the *Cornhill Magazine* some twenty years ago.

Meteorology.—The first of a course of lectures on Meteorology, by Mr. W. Marriott, F.R.M.S., was delivered on December 6th, in the reading-room of the Society of Engineers, Victoria-street, Westminster. Mr. Marriott began by showing how every one was interested in and affected by changes of the weather, and how important a knowledge of meteorology was to the engineer. After describing the constitution of the atmosphere, he explained the methods adopted for measuring the temperature of the air, and exhibited and described the vorious forms of thermometers which have been used for this purpose. Instruments for registering the maximum and minimum temperature, as well as those for giving a continuous record, both by photography and electricity, were also explained. The proper exposure of the thermometers in a screen, to protect them from radiation, and also the necessity of having the instrument verified at the Kew Observatory, having been dwelt upon, the lecturer referred to the diurnal and annual range of the temperature of the air. The highest temperature in the day occurs between one and two p.m., while the lowest during the night takes place just before sunrise. In this country January is usually the coldest and July the hottest month in the year. Temperature was also shown to decrease with altitude, the rate of decrease being about 1° for every 300 ft. After having described the boiling-point thermometer for measuring heights, the lecturer concluded by giving an account of observations made in some remarkable balloon ascents.

Proposed Convalescent Fever Hospital at Winchmore Hill.—At the meeting of the Metropolitan Asylums Board on Saturday last, the General Purposes Committee recommended that, subject to the approval of the Local Government Board, a freehold property known as Chaseville Park Estate, Winchmore Hill, and comprising about 36½ acres of park land, should be purchased as a site for a convalescent fever hospital, at the sum of 380*l*. per acre. Sir E. Hay Currie moved a resolution approving the recommendation. He said the matter of an additional convalescent fever hospital had been under the consideration of the Board for a period of two years, and in March last the committee were authorised to look out for an available site. This they had been doing, and the result was the selection of the site in question. The land had been valued at 15,500*l*., and the Board had the refusal of it at 13,800*l*. As to the necessity for an additional convalescent hospital, the case of Homerton Hospital at that time was a sufficient answer. At Homerton there were 225 cases of fever, and nearly 70 cases of small-pox. Many of those patients, being convalescent, were occupying valuable beds on land worth thousands of pounds an acre, whereas they might, to their great advantage in point of health, be taken to a convalescent hospital, which would stand upon land costing only 200*l*. or 300*l*. an acre. After some discussion, the question was adjourned.

Large Shear-Legs at Clydebank.—The new steam shear-legs which have been constructed by Messrs. James Taylor & Co., of Britannia Works, Birkenhead, for Messrs. Jas. & Geo. Thomson, engineers and shipbuilders, Clydebank, have during the past few days been tested by weights varying from 50 tons to the maximum of 120 tons, and have (according to the *Glasgow Herald*) stood the test in a most satisfactory manner. These are among the largest and most powerful of their kind yet made, the two front legs being each 108 ft., and the back leg 145 ft. long, whilst the screw on which the back leg travels is 47 ft. long and 9½ in. diameter. The engine has two cylinders 22 in. in diameter, with 18-in. stroke, the barrel for lifts over 50 tons being 5 ft. in diameter, and for lifts under 50 tons, 3 ft. in diameter. Instead of using chain for purchase, wire rope of special manufacture has been substituted, of which there are nine parts, capable of bearing a collective breaking strain of about 600 tons. No less than 700 tons of concrete have been used in forming the foundation, and the wharf has been well piled where the front legs step.

Tall Chimney Construction. — At a meeting of the Civil and Mechanical Engineers' Society, to be held on the 19th inst., Mr. R. M. Bancroft, Past President, assisted by his son, Mr. F. J. Bancroft, Assistant-surveyor to the Finchley Local Board, will read a paper on the construction of large chimney-shafts, illustrated by drawings of upwards of sixty examples built in brick, stone, concrete, and wrought-iron.

Fires in Theatres.—The number of theatres destroyed in the world from December 1, 1882, to December 1, 1883, was 22, with a loss of 575 lives. The theatres destroyed were :—December 2, 1882, Theatre of Point ad Pitre in the Antilles. January 7, Buff Theatre at Moscow. January 13, the Berditschaw Circus, near Kieff, in Russia, causing the death of 300 persons. January 22, the Schrikenhofen Theatre, in Mitau, Germany. February 8, the Opera House, in Toronto. February 18, the Theatre of Arad, in Hungary. March 18, the Circus of New Orleans, with the death of 60 persons and 100 wounded. April 4, the National Theatre of Berlin. April 8, the Salomonsky Circus, in Moscow. April 22, the Star Theatre, in Stockton. April 25, gas explosion at the Ambigu Theatre, in Paris; 20 wounded. June 5, the Barnum Circus, in Chicago. June 9, the Gaiety Theatre, Manchester. June 11, the Variétés Theatre in Warsaw. June 24, the theatre at Dervio, near Como; 48 victims and 10 wounded. July 8, the Summer Theatre of Warsaw. August 28, the Katamocomora Kamada Theatre, in Japan; 75 deaths, 115 wounded. August 29, the Summer Theatre, in Choiol, Russia; 12 deaths. October 30, the Herzog Circus, in Pesth. November 17, the Theatre Royal, in Darlington.

The Haswell Mechanical Coal-getter.—At a meeting of the members of the North of England Mining and Mechanical Engineers, held on Saturday last, in the Wood Memorial Hall, Newcastle, under the presidency of Mr. G. Baker Forster, a paper was read by Mr. W. F. Hall on "The Haswell Mechanical Coal-getter: an invention for working coal without the aid of gunpowder or other explosives." The following is an abstract of the paper :—

"This machine is for breaking down the coal after it has been kirved and nicked, by means of a mechanical contrivance which may be described as a combination of three of the most powerful mechanical appliances,—the screw, the lever, and the wedge. A hole, some 3 in. in diameter, is first drilled in the coal, and the wedge, together with two pieces of steel which it, — the wedge, — is intended to force asunder, are placed at the bottom of the hole. The two pieces of steel and the wedge are connected by means of bars to the outside of the hole, and fixed to four levers, jointed so as to form a rectangle, in such a way that the rods that are attached to the pieces of steel are fixed to the angle of the system of levers the furthest from the face, and the rod attached to the wedge to the angle nearest the face, so that when a screw that is attached to the two other angles of the system is so worked as to draw these together, the wedge is forced between the pieces of steel, which, after a few turns, become firmly secured in the coal and keeps the machine firm in its place while the wedge is being screwed home. This description of the machine will explain the immense multiplication of force which is possible out of this special combination of mechanical contrivances."

The Dobbs Testimonial Fund.—A meeting of gentlemen desirous of presenting a testimonial to Mr. Archibald E. Dobbs was held on Monday last at the Quebec Institute, Baker-street, under the presidency of Dr. B. W. Richardson, F.R.S. After a few remarks by the Chairman, in which he set forth the importance to the ratepayers of London of the decision obtained by Mr. Dobbs against the Grand Junction Waterworks Company, a resolution was unanimously passed appointing a central committee for the purpose of presenting a testimonial to Mr. Dobbs. The committee includes the names of several distinguished members of the medical profession, as well as two or three architects, viz., Mr. T. Chatfeild Clarke, Mr. Arthur Cates, and Mr. Mark H. Judge. Mr. Vaizey, of 68A, Lincoln's Inn-fields, was appointed hon. sec. *pro tem.*

The District Railway "Blowholes."—At the meeting of the Metropolitan Board of Works on the 7th inst., a report was presented from the Parliamentary Committee recommending that the committee be authorised to enter into communication with the Metropolitan District Railway Company, with a view to seeing whether any arrangement could be come to which would obviate the necessity of the Board proceeding with the Bill for the removal of the remaining ventilating shafts formed under the powers of the company's Act of 1881. The recommendation was agreed to.

Workhouse Additions.—The Guardians of St. Giles's and Bloomsbury have formally appointed Messrs. Wm. & A. Beresford Pite, of 5, Bloomsbury-square, as their architects to carry out the additions to their workhouse in Short's Gardens, Endell-street, W.C.

The Wolverhampton Sanitary Protection Association held its annual meeting on the 5th inst., when the secretary read a long and interesting report showing progress and setting forth a satisfactory balance-sheet. Lieut.-Colonel Thorneycroft afterwards spoke strongly in favour of compulsory sanitary inspection. Because of the want of this inspection he believed that more British subjects were killed annually than died on the battlefield, a theory which he supported by quotiug the large number of deaths which took place annually from typhoid and kindred fevers. He pointed out that if compulsory sanitary inspection were the law, the houses occupied by the poor would be put into a healthy state. The Sanitary Protection Society was voluntary, and at the rate the work had been going on for the last year or two it would take about 100 years to inspect all the houses and have them put in order. A deputation had waited upon Mr. Staveley Hill, M.P., in London more than a year ago, for the purpose of being introduced to the Local Government Board, but the result was such as to lead them to the belief that they would stand a better chance of success if they tried a private Bill, and this would be their next step.

Reminiscences of an Old Rugbeian.—Mr. Matthew Holbeche Bloxam, F.S.A., the well-known antiquary, has read a most interesting paper before the Rugby School Natural History Society, on his personal reminiscences of Rugby School as it was in 1813,—seventy years ago. Mr. Bloxam stated that there were forty-seven new boys entered the same term as himself,—August, 1813,—but of that number only two besides himself survive, viz., Sir William de Capel Brook, bart., now in his 83rd year, and Mr. T. S. Kynnersley, the well-known Birmingham stipendiary magistrate.

Stoppage of Work on a new Scotch Railway.—A dispute has arisen between the contractors and the Cathcart District Railway Company, relative to the matter of payment for work done, and the *Glasgow Herald* learns that the Railway Company have been served with a citation to the Court of Session at the instance of the contractors for payment of the sum of 18,000*l*.

Mr. and Mrs. German Reed's Entertainment.—On Monday next, December 17th, a new first part will be produced, entitled "A Moss Rose Rent," written by Mr. Arthur Law, the music supplied by Mr. Alfred Caldicott; and on Saturday Afternoon, December 22nd, Mr. Corney Grain will give for the first time his new musical sketch for the holidays, entitled "Master Tommy's School."

TENDERS.

For four workmen's cottages at the Goldstone Waterworks, and two at the Redhill Reservoir, for the Brighton Corporation. Mr. P. C. Lockwood, Borough Surveyor:—

Newnham, Brighton	£4,100 0 0
Anscombe, Brighton	3,970 0 0
Garratt, Brighton	3,950 0 0
Bruton, Brighton	3,772 0 0
Barnes, Brighton	3,640 0 0
Holloway Bros., Brighton	3,595 0 0
Nurcombe, Hove	3,564 0 0
Chappell, Hove	3,525 0 0
Marshall, Brighton	3,500 0 0
Lockyer, Brighton	3,407 0 0
Parsons, Brighton	3,399 0 0
Peters, Horsham	3,275 0 0
Longley, Crawley	3,240 0 0
Hudson, Kearley, & Co., Brighton	3,138 0 0
Taylor, Brighton	3,098 0 0
Webber, Brighton	2,775 0 0

For rebuilding the White Hart public-house, Wigmore-street, W., for Mr. Alfred Crockford. Mr. W. T. Sams, architect. Quantities supplied by Messrs. J. & A. E. Bull:—

Reading	£2,760 0 0
Hall, Beddall, & Co.	2,587 0 0
Macey	2,585 0 0
Patman & Fotheringham	2,473 0 0
Anley	2,467 0 0
Howell & Son	2,394 0 0
Toms (accepted)	2,346 0 0

For alterations to the Borough Tavern, London Bridge, for Mr. E. J. Reed. Mr. W. T. Sams, architect :—

Groombridge	£386 0 0
Boothby	385 0 0
Toms	383 0 0
Patman & Fotheringham	354 0 0
Anley (accepted)	330 0 0

For alterations to Holm Dene, Yateley, Hants. Mr. W. T. Sams, architect :—

Bunch (accepted)	£1,760 0 0

For alterations and additions at the Joiners' Arms Tavern, Westminster Bridge-road, for Mr. Wm. Lefley. Mr. Alfred Wright, architect :—

J. Beale (accepted)	£369 0 0

For Folkestone Borough (North) Board Schools, for 700 children. Mr. Joseph Gardner, Folkestone, architect. Quantities supplied by the architect:—

H. R. Mercer, Folkestone	£6,942 0 0
Hatton & Co., London	6,890 0 0
H. Unwin, Folkestone	6,258 0 0
R. Marriott, Wellingborough	6,083 0 0
D. Baker, Folkestone	5,995 0 0
Foster & Dicksee, Rugby	5,950 0 0
W. J. Adcock, Dover	5,850 0 0
H. Clemmans, Folkestone	5,779 0 0
G. Denne, Deal	5,694 0 0
W. Brooks, Folkestone	5,649 0 0
J. Wise, Deal	5,600 0 0
J. T. Petts & Son, Folkestone	5,580 0 0
R. Webster, Folkestone	5,550 0 0
H. Stiff, Dover	5,531 0 0
Willes & Co., Dover	5,500 0 6
Whelsh & Co., Dover	5,489 0 0
G. Prebble, Folkestone (accepted)	5,360 0 0

For alterations and additions to Ashley Grange, Ashley-hill, Bristol, for Mr. Francis W. Gedge. Mr. Herbert J. Jones, architect, Bristol:—

J. E. Davis, Bristol	£1,470 0 0
J. Bastow, Bristol	1,367 0 0
Eastabrook & Sons, Bristol	1,321 0 0
W. Church, Bristol	1,264 0 0
T. R. Lewis, Bristol	1,233 0 0
Wilkins & Sons, Bristol	1,215 0 0
Edkins & Sons, Bristol	1,183 0 0
T. H. Brown, Bristol	1,143 5 0
A. Saise, Bristol	1,136 0 0
G. Humphreys, Bristol	1,119 12 0
E. & T. Hatherley, Bristol	1,087 0 0

Accepted for Wesleyan Manse, at Clevedon, Somerset. Mr. Herbert J. Jones, architect:—

W. A. Green, Clevedon	£821 0 0

For farm-house at Chew Stoke, near Bristol, for Mr. Jas. Britton. Stones for main walling supplied. Mr. Herbert J. Jones, architect:—

G. Humphreys, Bristol	£484 0 0
A. Brittan, Chew Stoke	448 10 0
W. A. Green, Clevedon	430 10 0
T. R. Lewis, Bristol	394 0 0
G. Willcox, Clevedon	385 0 0

For alterations, &c., to No. 3, King's Parade, Whiteladies-road, Bristol, for Mr. Wm. Bennett. Mr. Herbert J. Jones, architect:—

Eastabrook & Sons, Bristol	£260 0 0
G. Humphreys, Bristol	230 0 0
T. R. Lewis, Bristol	195 0 0
J. Bastow,* Bristol	189 0 0
E. & T. Hatherley, Bristol	187 0 0

* Accepted, exclusive of garden steps.

For repairs, painting, &c., at No. 62, King William-street, E.C., for the Municipal Building Society. Mr. Thomas Ward, architect:—

Hatfield & Son	£345 0 0
Scharien & Williams	345 0 0
Colls & Son	299 0 0
Harrison & Wood (accepted)	227 0 0

For alterations to the premises, and new bar-fittings, at the Royal Oak Hotel, Hastings. Mr. Arthur Wells, rchitect, Havelock-road, Hastings:—

J. Reid, Streatham	£885 10 0
J. Howell & Son, Hastings	720 0 0
J. Walker, Limehouse	688 0 0
Pewterer's Work.	
J. Warne	120 0 0
J. Browning	111 0 0
W. Helling	105 0 0
Sanders & Sons (accepted)	92 15 0

For factory for Messrs. Sprostons Bros., Dudley. Mr. J. G. Wright, architect:—

Love & Flint	£1,384 0 0
Webb & Round	1,133 0 0
Pitaway	1,079 0 0
J. H. Bate (accepted)	1,060 0 0
Harvey	1,011 0 0

Accepted for the erection of Board Schools at Wordsley, to accommodate 400 children, for the Kingswinford School Board. Mr. T. Robinson, architect. Quantities supplied:—

J. H. Bate, Dudley	£2,000 0 0

For making Margetts-road, Kempston, Beds. Mr. F. T. Mercer, surveyor, Bedford:—

Haywood	£176 0 0
Freeborough	140 0 0
Thorpe	115 8 0

For rebuilding the Blue Last Tavern, Broadway, Ludgate-hill, for Mr. Wm. Gabb. Mr. Geo. Treacher, architect. No quantities supplied:—

	Revised Tenders.
Marr, Hackney	£4,990 ..... —
Lidstone, Farringdon-street	4,930 ..... £4,080
J. Beale	4,800 3,897
Turtle & Appleton	4,800 ..... 3,795*

* Accepted.

For bar-fittings, &c., at the Coopers' Arms Tavern, Tower-street, S.E., for Mr. F. Broughton. Mr. Geo. Treacher, architect:—

J. Beale (accepted)	£348 0 0

For erecting stable to Christchurch Lodge, Brondesbury Park, N.W., for the Rev. J. L. Henham. Mr. Stanley Parker, 427, Edgware-road, architect:—

Stevenson	£662 0 0
Petchy	616 10 0
Rogers	580 0 0
Evans (accepted)	491 0 0

Accepted for completing two detached residences, Gerrards Cross, Buckinghamshire, for Mr. C. Gover. Mr. Stanley Parker, architect:—

Kearley, Uxbridge	£330 11 0

Accepted for building seventeen houses at Sudbury. Mr. Gard Pye, architect:—

W. H. Rowland	£8,500 0 0

Accepted for the erection of an infectious diseases hospital, West Bromwich, for the West Bromwich Town Council:—

C. A. Horton, Brierley Hill	£3,598 0 0

SPECIAL NOTICE.—Correspondents are desired to send *full lists* of persons tendering, *with the amount of each tender*. In future, *no single name will be given without the amount of the tender*, and not then unless we have the assurance of the sender that there was no competition.

To Contributors and Correspondents.

All Letters and Communications referring to Literary and Artistic Matters must be addressed—

"*To the Editor of* The Builder,
46, *Catherine-street*,
Covent Garden, W.C.,"

And not to any individual by name.

C. R. A. (received).—W. P. B.—W. F. P. (cannot re-open the subject).—B. C. M. (shall have attention).—H. H. B. (we cannot publish statements as to what the executive body are going to do, except on official intimation).—P. B. L. (next week).—B. & D. (drawing received).

Correspondents should address the Editor, and *not* the Publisher except in cases of business.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

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